P
Med
M

PROCEEDINGS

OF THE

MONTREAL

MEDICO-CHIRURGICAL SOCIETY

1892-93, 1893-94.

VOL. VII.

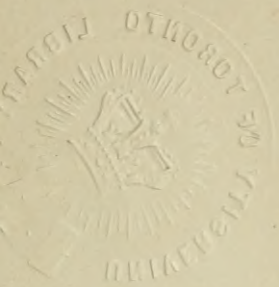
UNIVERSITY OF TORONTO LIBRARY

PUBLISHED BY THE SOCIETY.

412845
5.6.43

MONTREAL:
PRINTED BY THE GAZETTE PRINTING COMPANY.
1895

R
15
M73
v.7



PRESIDENTS

OF THE

MONTREAL MEDICO-CHIRURGICAL SOCIETY

SINCE ITS REORGANIZATION IN 1870.

*GEO. W. CAMPBELL, M.D.....1870
*H. PELTIER, M.D.....1871
*R. P. HOWARD, M.D.....1872, 1879
W. H. HINGSTON, M.D...1873, 1880
*JOHN REDDY, M.D. 1874
*R. T. GODFREY, M.D.....1875
*GEO. E. FENWICK, M.D.....1876
F. W. CAMPBELL, M.D.....1877
*HENRY HOWARD, M.D.....1878
*GEORGE ROSS, M.D 1881
*R. A. KENNEDY, M.D.....1882
*T. A. RODGER, M.D 1883
T. G. RODDICK, M.D.....1884, 1885
J. C. CAMERON, M.D.....1886
JAMES PERRIGO, M.D.....1887
WILLIAM GARDNER, M.D.....1888
GEO. E. ARMSTRONG, M.D....1889
F. J. SHEPHERD, M.D.....1890
F. BULLER, M.D 1891
JAMES STEWART, M.D.....1892
JAMES BELL, M.D. 1893
G. P. GIRDWOOD, M.D 1894

SECRETARIES.

T. G. RODDICK, M.D.1870-71-72-73-74
*JOHN BELL, M.D.....1875
A. A. BROWNE, M.D.....1876
*J. D. CLINE, M.D.....1877
*R. L. MACDONNELL, M.D.....1877
O. C. EDWARDS, M.D...1878-79-80-81
A. HENDERSON, M.D.....1882
D. F. GURD, M.D.....1883-84-85
R. F. RUTTAN, M.D.....1886-87-88
H. S. BIRKETT, M.D.....1889
J. G. MCCARTHY, M.D.....1890
K. CAMERON, M.D.....1891-92-93
G. GORDON CAMPBELL, M.D..1894

* Deceased.

LIST OF MEMBERS

CORRECTED TO OCT. 5TH, 1894.

ORDINARY MEMBERS.

Adami, J. G., M.D., McGill Medical College.
Alexander, D. B., M.D., 1018 St. Catherine street.
Allan, J. H. B., M.D., 928 Dorchester st.
Alloway, T. J., M.D., 23 Mackay street.
Anglin, J. V., M.D., 171 Greene Avenue. Cote St. Antoine.
Armstrong, G. E., M.D., 1127 Dorchester street.
Auger, L. L., M.D.,

Beaudry, J. A., M.D., 379 St. Denis st.
Beers, Arthur, M D., 47 Union Avenue
Bell, Jas. M.D., 873 Dorchester street.
Bell, J. H., M.D., 539 Wellington street.
Berwick, Geo. A., M.D., 49 Prince Arthur street.
Birkett, H. S., M.D., 123 Stanley street.
Blackader, A. D., M.D., 236 Mountain st.
Blackader, E.H. P., , M.D., 136 Dorchester street.
Brennan, M. T., M.D., 200 St. Hubert st.
Brodeur, A., M.D., 707 Sherbrooke st.
Booth, J. S., M.D.
Brown, C. O., M.D., 55 Adelaide street. Detroit Mich.
Brown G. A., M.D., 2437 Notre Dame st.
Browne, A. A., M.D., 1002 Sherbrooke st.
Bruère, A. A., M.D., 492 St. Charles Barromme street.
Brunelle, J. A. S., M.D., 698 Sherbrooke street.
Buller, F., M.D., 123 Stanley street.
Burgess, T. J. W., M.D., Verdun.

Cameron, Kenneth, M.D., 903 Dorchester street.
Cameron, J. C., M.D., 941 Dorchester st.
Cameron, C. E., M.D., 53 Union Aveuue
Campbell, F. W., M.D., 10 Phillips place.
Campbell, G. G., M.D., 2475 Notre Dame
Campbell, Lorne, M.D. 308 Peel street.
Campbell, Rollo, M.D., 58 Mackay street.
Carmichael, H. B., M.D., 515 Wellington street
Cleroux, L. J. V., M.D., 1105 Ontario st.
Corsan, D., M.D.,
Craik, Robt., M.D., 887 Sherbrooke street.

DeCow, D. McG., M.D., 913 Dorchester st.
Derosiers, H. E., M.D., 164 St. Denis st.
Devlin, F. E., M.D , 79 Mackay street.
Drummond, W. H., M.D., 249 Mountain street.
Duquet, E. E., M.D., Longue Pointe, Que.

Elder, J. M., M.D., 4178 St. Catherine st.
England, F. R., M.D., 58 Beaver Hall Hill
England, W. S., M.D.,

Evans, D. J., M.D., 939 Dorchester street.

Fielde, E. C., Prescott, Ont,
Finley, F. G., M.D., 803 Dorchester st.
Foley, J. Leslie, M.D., 55 Union avenue,

Gardner, A W., M.D., 939 Dorchester St.
Gardner, J. J., M.D., 12 Phillips place.
Gardner, Wm., M.D., 109 Union Avenue.
Girdwood, G. P., M.D., 82 University st.
Guerin, J. J., M.D., 912 Dorchester st.
Gunn, N. D., M.D., 1 Beaver Hall Square.
Gurd, D. F., M.D., 2669 St. Catherine st.

Haldimand, A. W., M.D., 2584 St. Catherine street.
Hamilton, H. D., M.D., 82 Union Avenue.
Hayes, P. J., M.D., 113 McCord street.
Hingston, W. H., M.D., 882 Sherbrooke st.
Howard, R. J. B., M.D, London, Eng.
Hutchinson, John A., M.D., 4170 St. Catherine street.
Hutchison, J. Alex., M.D., 70 Mackay st.

Jack, J. M., M.D., 56 Beaver Hall Hill.
Johnston, Wyatt G., M.D., 1018 Sherbrooke street.

Kennedy, E. J., 756 Lagauchetiere street.
Kinloch, J. A., M.D., 584 Wellington st.
Kirkpatrick, R. C., M.D., 163 Mansfield st.

Laberge, L., M.D., City Hall.
Lachapelle, E. P., M.D., 476 Sherbrooke street.
Lafleur, H. A., M.D., 58 University st.
LaForest, G. L., M.D., 274 St. Denis st.
Lockhart, F. A. L., M.D., 59 Metcalfe st.

MacCallum, D. C., M.D., 45 Union ave.
Macdonald, J. A., M.D., 1 Belmont street.
Mackenzie, S. R., Montreal General Hospital.
Macphail, J. A., M.D., 2430 St. Catheiine street.
Major, G. W., M.D., 82 Union avenue.
Martin, C. F., M.D., 801 Dorchester st.
McBain, J., M.D., 2671 St. Catherine st.
McCarthy, J. G., M.D., 47 Union avenue.
McConnell, J. B., M.D., 943 Dorchester st.
McGannon, E. A., M.D., Brockville, Ont.
McGannon, M. C., M.D., New York.
McKenzie, R. Tait, M.D., 2430 St. Catherine street.
Mercier, O. F., M.D., 144 St. Denis street,
Merrill, G. H., M.D., 751 Bleury street.
Mignault, L. D., M.D., 155 Bleury street.
Mills, T. Wesley, M.D., 515 Lansdowne avenue, Cote St. Antoine.
Molson, J. E, M.D., London, Eng.

Molson, W. A., M.D., 61 Union avenue.
Morrow, W. S., M.D., 107 Prince Arthur street.
Muirhead, D., M.D,, Carlton Place, Ont.

O'Connor, Chas., M.D,. 68 Beaver Hall.
Orr, A. E., M.D., 82 University street.

Pattee, R. K., M.D., Vankleek Hill, Ont.
Perrigo, Jas., M.D., 826 Sherbrooke st.
Praeger, E. A., M.D., Nanaimo, B. C.
Proudfoot, A.. M.D., 2 Phillips place.

Reddy, H. L., M.D., 999 Dorchester st.
Reed. Thos. D., M.D., 91 University st.
Reid, J. T., M.D., 637 Wellington street.
Ricard, A. G. A., M.D., 146 St. Denis st.
Robertson, T. F., M.D., Brockville, Ont.
Roddick, T. G., M.D., 80 Union avenue.
Ross, G. T., M.D., 945 Dorchester street.
Ruttan, R. F., M.D., 1018 Sherbrooke st.

Schmidt, A. F., M.D., 344 St Antoine st.
Shanks, A. L., M.D., Miami, Man.
Shaw, T. P., M.D., 4430 St. Catherine st.
Shepherd, F. J., M.D., 152 Mansfield st.
Smith, A. Lapthorn, M.D., 248 Bishop st.
Spendlove, F. R. M., M.D., 2709 St. Catherine street.
Spier, J. R., M.D., 2545 Notre Dame st.
Springle, J. A , M.D., 410 St. Antoine st.
Stewart, James, M.D., 285 Mountain st.
Stewart, W. G., M.D., 42 Prince Arthur st.
Stirling, J. W., M.D., 285 Mountain st.
Sutherland, W. R., M.D.,

Telfer, W. T., M.D., 46 Richmond Square.
Thompson, F. E., M.D., 141 Bleury street.

Villeneuve, Geo., 162 St. Denis street.
Vipond, A. E., 2723 St. Catherine street.

Wade, A. S., M.D.. St. Lambert.
White, J. J., M.D.,
Wilkins, Geo., M.D., 898 Dorchester st.
Williams. E. P., M.D., 151 Metcalfe st.
Wilson, C.W., M.D., 2436 St. Catherine st
Wilson, Robert, M.D., 596 Wellington st.
Wilson, R. H., M.D.,
Wilson, S. F., M.D., 545 Wellington st.

TEMPORARY MEMBERS.

Bazin, A. T., M.D., Mont. Gen. Hospital.
Byers, W. G., M.D., "
Fisk, George. M.D., "
Gorrell, C. W., M.D., "
Kinghorn, H, McL., M.D., "
Manchester, G. H., M.D., "
Rimer, F. E., M.D. "
Denny, H. E.. Western Hospital.
Cameron, J. D., M.D., Royal Vic. Hosp.
Colvin, A. R., M.D., Royal Victoria Hosp.
Davidson, A., M.D., "
Fry. F. M., M.D., "
Mathewson, G. H., M.D.. "
Nicolls, A. G., M.D., "
Robertson, A. A., M.D., "
Scane, J. W., M.D., "
Shaw, H. S., M.D., "

CORRESPONDING MEMBERS.

Robert Bell, M.D., Geological Survey, Ottawa.
Geo. Duncan, M.D., London, England.
O. C. Edwards, M.D., Ottawa.
Wm. Fuller, M.D., Grand Rapids. Mich.
C. E. Gooding, M.D. Barbadoes, W,I.
Sir James Grant, M.D., Ottawa.
Percy Mathews, M.D., York Factory, Hudson Bay.
A. Henderson, M.D., Merriam Park, Minn.
Duncan McEachran, F.R.C.V.S., Montreal.
José Pererira Ryo Filbo, M.D., Rio de Janeiro, Brazil.
David L. Phillip, M.D., Brantford, Ont.
Rodriguez Rubi, M.D., Medical Officer of Government, Madrid.
Colin C. Sewell, M.D., Quebec.
Geo. O'D. Walton, M.D., Barbadoes, W.I.
E. Worthington, M.D., Sherbrooke, Que.

HONORARY MEMBERS.

Wm. Osler, M.D., F.R.C.P., Johns Hopkins Hospital, Baltimore.
George H. Fox, M.D., New York.

INDEX TO VOL. VII.

PAGE

Abdominal Section after Confinement 246
Abdominal Surgery, A Year's Experience 263
Abscess, A Rare Form of Sub-Diaphragmatic 312
Abscess, Amœbic, of Liver 375
" of Brain 362
" Chronic, of Bone 320
" Multiple, of the Brain, Associated with Pulmonary Disease 394
Abscess, Ovarian 28
Adami, Dr. J. G. 24, 30, 55, 57, 60, 85, 90, 113, 115, 117, 128, 153, 158, 170, 181, 193, 236, 241, 306, 308, 309, 312, 320, 328, 329, 332, 352, 353, 354, 362 363, 371, 375, 383, 394, 421, 432, 433, 435, 436, 437, 440, 444, 448
Addison's Disease 211
Address of the Retiring President, Dr. James Stewart 297
Address of the Retiring President, Dr. James Bell 472
Adenoma and Angioma in a Woodchuck 435
Adhesions Between the Cervix Uteri and Vagina. Illustrated 76
Albuminuria of Pregnancy 364
Alcoholism, Treatment by Hypodermic Injections of Nitrate of Strychnine 98
Allan, Dr. J. H. B. 239, 327
Alloway, Dr. T. Johnson 60, 113, 115, 241, 332, 333, 436, 437, 439
Amœbic Abscess of the Liver 375
Amputation, Interscapulo-Thoracic. 1
Anæmia, A Case of Pernicious, with an Analysis of the Blood Serum 153
Aneurism, Multiple 25
" of Aorta, with Erosion of Ribs 359
Angioma of the Colon 444
Angiosarcoma of the Pleura 400, 421
Annual Meeting, 1893 296
" 1894 469
Appendicitis, Case Reports .. 136, 310, 401, 450
Appendicitis in a Patient with Sacro-Iliac Disease 221
Appendicitis, with Ruptured Tubal Pregnancy 339
Appendicitis, with a Pin in the Appendix as the Exciting Cause 460
Appendix Adherent to Pus Tube 133
" Blood Supply of 331
" Concretion from 450

PAGE

Appendix, Specimens of 158
Armstrong, Dr. G. E. 24, 25, 28, 85, 221, 235, 246, 320, 334, 339, 380, 400, 401, 456
Arthrectomy 380
Atresia of the Vagina. Hæmatometra, Hysterectomy 359

Bacillus Pyocyaneus, Case of Infection by 414
Bacillus of Diphtheria, A Ready Method of Cultivating 6
Bell, Dr. James .. 27, 28, 48, 57, 93, 133, 136, 191, 297 309, 310, 311, 331, 338, 340, 344, 352, 362, 363, 390, 391, 392, 393, 398, 408, 427, 441, 450, 451, 454, 460, 461, 466, 472
Belladonna Poisoning 342
Berwick, Dr. R. Hugh, Obit. Notice. 90
Birkett, Dr. H. S. 4, 8, 77, 329
Blackader, Dr. A. D. 174, 211, 297
Boat-shaped Negro Skull 372
Bone, Chronic Abscess of 320
Bradycardia 119
Brain, A Case of Multiple Abscess .. 394
" Bullet Wound of the 393
" Causation of Inflammation of the 405
Brain, Sclerosis of 215
Bronchus Foreign Body in the 408
Brown, Dr. George A. 403
Buller, Dr. F. 238, 328

Calculi, Four from the Bladder 463
" Oxalate of Lime from Kidney 331
Cameron, Dr. J. C. 146, 258, 454
" Dr. Kenneth .. 94, 296, 297 471
Campbell, Dr. A. W., Obit. Notice .. 296
" Dr. F. W. 338
" Dr. G. Gordon .. 7, 36, 335, 344, 416, 420, 472
Cancer Arising from Sudoriparous Gland 319
Cancer of the Uterus 255, 363, 373
Carcinoma of the Peritoneum. 55
" and Sarcoma of the Peritoneum 329
Carcinoma of the Ovary 4
" of the Rectum 441
Caries of Vertebræ 427
Chloroform Accident 451
Cholecstoymy 326 334, 398, 464
Cholesterine Cyst of the Testis 371
Cirrhosis of Liver 219
Colotomy, Inguinal 1
College of Physicians and Surgeons of the Province of Quebec 327
Concretion from an Appendix. 450

PAGE

Congenital Defect of the Anterior Pillar of the Fauces 389
Conjunctiva, Congenital Polypoid Growth of 328
Copper Nugget in the Form of a Human Skull Cap 342
Copper Sulphate, Poisoning by 236
Cor Bovinum 128
Coroner's Court, Six Months' Medical Evidence in 275
Coroner's Law, Reform in the ...325, 331, 481
Cyst, Cholesterine 371
" Ovarian....60, 137, 159, 241, 144, 315, 332, 436, 437
Cyst, Ovarian Dermoid 3, 115, 308
" of Right Ventricle. 57
Cystitis, Fibrinous 117

Danger of Hypodermic Injections of Morphia 538
Day, Mr J. L 383
Death Certification 324, 332
Dermatitis Exfoliativa 2
Dermoid Cysts of both Ovaries . 115
" Removed from a Woman six months Pregnant 3
Diphtheria, Anomalous Cases of 77
" Ready Method of Cultivating the Bacillus 6
Dislocation of the Eleventh and Twelfth Dorsal Vertebræ 24
Dislocation of Hip-joint Treated by Resection 454
Dougall, Dr. 117
Dystocia due to Hydrocephalus 151

Elder, Dr. J. M 342
Empyæma, Calcified Plates from Pleura in 363
Empyæma of the Antrum of Highmore 8
Empyæma, Thoracic 239
Enchondroma in the Mamma of a Bitch 181
Enteritis, Pseudo-Membranous 132
Epilepsy 326, 362
Epithelioma of the Soft Palate 198
" of the Cervix Uteri 439
Ether Anæsthesia, Report of One Hundred Cases 36
Ether Anæsthesia, Urinalysis in One Hundred Cases 416
Evans, Dr. D. J 151
Excision of the Tongue 133
" of the Wrist 25, 28
Exophthalmic Goître 239, 420
Exostosis Bursata 431

Femoral Artery, Bullet Wound of .. 309
" Fibroid Tumour from Sheath of 309
Fenwick, Dr. G. E., Obituary Notice 453, 478
Finley, Dr. F. G .25, 29, 310, 328, 354, 375, 386, 394
Fistula, Recto-Ovarian 237
Foreign Body in the Bronchus. 408
Fracture, Compound Depressed, of the Occipital Bone 392
Fracture, Hyperostosis Following... 431
" intra-capsular, in a Paralyzed Limb 349
Fracture, Intra-capsular 430
" Multiple, of the Pelvis and Femur 391

PAGE

Fracture of the Tibia in a Partridge. 3
Fractures, Skeleton of a Hawk with Multiple 372
Frogs with the Cerebrum Removed 381

Gardner, Dr. William ..3, 6, 137, 244, 306, 3 8, 359, 363
Gasserian Ganglion, Removal for Facial Neuralgia 311
Girdwood, Dr. G P 472
Goître, Exophthalmic 329, 420
" Removal of 286
Gonococcus, Cultures of 432
Guerin, Dr. J. J 342
Gunn, Dr. N. D 203, 432

Hæmatoma of Fallopian Tube 333
Haldimand, Dr. A. W 420
Hannay, Dr 173
Hamilton, Dr. H. D 198, 263, 389
Heart, Wound of 388
Hernia, of an Ovary through the Inguinal Canal in an Infant 57
Hernia, Scrotal 235
Hibernation and Allied States in Animals and Man 317
Hingston, Dr. W. H 296, 297, 373
Hodgkins' Disease, Enlarged Glands Pressing on the Trachea 310
Homicide, Statistics of, in American Cities 323
Horse-pox Affecting the Cow 193
Hutchinson, Dr. John A 315
Hutchison, Dr. J. Alex 472
Hydronephrosis, Double 330
Hyperostosis Following Fracture 431
Hysterectomy, Vaginal 256

Induction Coil for using the Ordinary Electric Light Current for the Thermo-Cautery 344
Infectious Pneumonia 335
Insular Sclerosis 325
Interscapulo-Thoracic Amputation.. 1

Jack, Dr. J. M 297, 470, 472
Johnston, Dr. Wyatt. .6 58, 80, 124, 182, 210, 215, 219, 222, 236, 275, 315, 323, 375, 373

Kidney, Rupture of 326
Kirkpatrick, Dr. R. C...391, 429, 444, 448

Laberge, Dr. Louis 324
Lafleur, Dr. H. A 119
Laparotomy, the Curative Effects of. 345
Leuchæmia, Acute 402
" in a Child 354
Liver, Cirrhosis of 219
Lockhart, Dr. F. A. L 472

Macdonald, Dr. J. A 296
Macroglossia 236
Martin, Dr. C. F 319, 330, 332, 361
Masked Tuberculosis 138
Maxilla, Inferior, as a Means of Identification 315
McConnell, Dr. J. B 98, 239, 297, 472
McEachran, Dr. D 159
Melanotic Sarcoma of the Foot 400
Meningocele, Occipital 94
Mills, Dr. T. Wesley....317, 321, 381, 405, 434, 436
Mitral and Tricuspid Stenosis 386
Morphœa 420
Morrow, Dr. W. S 138, 381

PAGE

Murphy Button 375
Mycetoma Pedis 448
Myeloid Sarcoma of the Second Metatarsal Bone 193
Myoma of the Uterus 6, 113, 243
Myxo-Lipoma, Retro-Peritoneal 113

Nasal Septum Knives 263
Nephrectomy through Abdominal Incision 183
Nephro-Lithotomy, Double 27
Nephritis, Chronic, in a Dog 433
Neuralgia, Removal of Gasserian Ganglion for Cure of 311
Neurasthenia of the Stomach 203
New Members:
Dr. J. G. Adami 24
Dr. D. H. Alexander 390
Dr. A. H. Beers 239
Dr. G. A. Berwick 311
Dr. H. B. Carmichael 305
Dr. E. C. Fielde 151
Dr. N. D. Gunn 24
Dr. A. W. Haldimand 90
Dr. H. D. Hamilton 24
Dr. P. J. Hayes 305
Dr. E. J. Kennedy 400
Dr. S. R. Mackenzie 433
Dr. C. F. Martin 305
Dr. R. Tait McKenzie 317
Dr. O. F. Mercier 379
Dr. W. S. Morrow 1
Dr. A. E. Orr 1
Dr. G. H. Raymond 332
Dr. J. T. Reid 311
Dr. A. G. A. Ricard 328
Dr. T. P. Shaw 305
Dr. J. R. Spier 3
Dr. George Villeneuve 317
Dr. A. S. Wade 3
Dr. Robert Wilson 361
Dr. S. F. Wilson 332

Obituary:—
Dr. Hugh Berwick 90
Dr. A. W. Campbell 298
Dr. G. E. Fenwick 453, 478
Dr. George Ross 23
Dr. Joseph Workman 407, 476
Osteo-Sarcoma of the Tibia and Fibula 373
Osteo-Sarcoma of the Femur 429
Ovarian Abscess 28
" Cysts .. 60, 115, 137, 159, 241, 244, 315, 332, 436, 457
Ovarian Dermoids 115, 368
" Carcinoma 4

Palate, Epithelioma of the Soft 198
Pancreatitis, Acute Hæmorrhagic, with Fat Necrosis 29
Papillary Growth of the Lower Bowel 60, 182
Paralysis of the Arm Following the Application of an Esmarch's Bandage 191
Paramyoclonus 29
Paris Green, Poisoning by 222
Pediculi Pubis on the Scalp 7
Pelvis, Fracture of the 391
Pericarditis, with Necrosis of the Sternum 361
Peritoneum, Carcinoma of 55
" Grape Tuberculosis of .. 306
" Mixed Carcinoma and Sarcoma 329

PAGE

Pernicious Anæmia, with Chemical Analysis of the Blood Serum .. 183, 155
Perrigo, Dr. James 217, 219, 472
Pneumonia, Cases of Infectious 335
Poisoning by Belladonna 342
" by Canned Tomatoes 373
" by Copper Sulphate 236
" by Paris Green 222
" by Potass. Chlorat 58
Polypus of the Left Tonsil 329
" " Uterus 372
Pregnancy, Tubal, Ruptured 353, 437
" Ruptured, with Appendicitis 339
Prostate, Malignant Growth of 90
" Tumours of 85, 461
Proudfoot, Dr. A 297
Pseudo-Membranous Enteritis 432
Pulmonary Artery, Rupture of 210
Pylorectomy 456
Pyloroplasty 317
Pyosalpynx and Gonorrhœal Arthritis 321
Pyosalpynx, Double, with Intestinal Fistula 333
Pyosalpynx 321, 410
Pus Tubes and Ovary with Adherent Appendix 133
Recto-Ovarian Fistula 237
Rectum, Carcinoma of 441
Reed, Dr. T. D 297, 309, 471
Reports of Committees:—
On Infectious Diseases 146
On Rules for the Prevention of the Spread of Tuberculosis 225
On the Reform of the Coroner's Law 325, 331, 481
Resection of the Intestines 485
" " Hip-joint 454
Resignations:—
Dr. A. A. Foucher 311
Dr. J. B. A. Lamarche 1
Retina, White Sarcoma of 238
Rhinolith 4
Roddick, Dr. T. G 309, 463, 468
Ross, Dr. George, Obituary Notice ... 23
Rupture of the Kidney 326
" " Pulmonary Artery .. 210
Ruttan, Dr. R. F 155

Saline Enemata in Hæmorrhage 315
Salpingitis, Chronic 60, 241
Sarcoma, Myeloid, of the Second Matatarsal Bone 193
Sarcoma, Melanotic, of the Foot 400
" of Peritoneum 329
" of Upper End of Tibia 451
" of Retina 238
Scarlet Fever, Synopsis of One Hundred Cases 364
Schmidt, Dr. A. F 151
Sclerosis of the Brain 215
" Insular 325
Semi-lunar Cartilage 331
Shaw, Dr. H. P 359
Shepherd, Dr. F. J ... 1, 2, 3, 193, 236, 305, 317, 326, 331, 345, 371, 379, 388, 455, 461, 464, 472
Skeleton of a Hawk with Multiple Fractures 372
Skin Transplantation after Thiersch's Method 48
Smith, Dr. A. Lapthorn .. 4, 60, 62, 133, 159, 183, 255, 256, 263, 305, 315, 321, 325, 344, 364, 372, 373, 375, 410

PAGE

Spier, Dr. J. R. ... 364
Springle, Dr. J. A. ... 32, 33, 76, 258
Statistics of Homicides in American Cities ... 322
Stenosis of the Mitral and Tricuspid Valves ... 386
Stewart, Dr. James, 29, 297, 325, 400, 402, 421
Sub-diaphragmatic Abscess ... 312
Sudoriparous Gland, Cancer Arising from ... 319
Supernumerary Digits in a Pig's Manus ... 371
Suture of Tendons of the Hand ... 314
Symphysiotomy ... 32, 33, 258, 454

Tabes Without Absence of Knee-Jerk ... 328
Talipes Equino-Varus ... 390
" Varus ... 391
Testis, Cholesterin Cyst of ... 371
Thyroid Gland, Enucleation of Tumours of ... 305, 331
Thyroid Gland, Calcareous Tumours of ... 460
Tongue, Excision of ... 133
Tonsil, Small Pedunculated Polyp of 329
Transient Swelling of the Right Arm 338
Tuberculosis, Etiology ... 174
" Discussion on ... 184
" Communicability from Animals to Man and from Man to Animals ... 159
Tuberculosis, Communicability from Man to Man ... 170
Tuberculosis, Grape, of the Peritoneum ... 306
Tuberculosis, Masked ... 138
" of Ascending Frontal Convolution ... 236

PAGE

Tuberculosis of Liver and Oviduct of a Pigeon ... 321
Tuberculosis of Peritoneum ... 62
Typhoid Fever, Hæmorrhagic ... 352
Typhoid Fever, Remarks on a Recent Epidemic ... 124
Typhoid Fever, with Double Pneumonia ... 403

Ureter, Complete Double ... 383
Urinalysis in One Hundred Cases of Ether Anæsthesia ... 416
Urine Coloured by Methylene Blue ... 440
Urticaria, Factitious ... 344
Uterine Myoma ... 6, 113, 243
Uterus, Cancer of ... 255, 363, 373
" Epitheliona of Cervix ... 439
" Fibroid Tumor of ... 305 306
" Fibro-Cystic Tumour of ... 325
" Necrosed Polyp of ... 372

Vagina, Atresia of ... 359
Ventricle, Cyst of the Right ... 57
Vertebræ, Caries of ... 47, 427
" Dislocation of the 11 hand 12th Dorsal ... 24
Vermiform Appendix, Blood Supply of ... 331
Villeneuve, Dr. George ... 275

Williams, Dr. E. P., 326, 359, 391, 427, 429, 430, 431, 441, 444, 448
Wolff, Dr. G. C. L. ... 373 440
Workman, Dr. Joseph. Obituary Notice ... 407, 476
Wound of the Heart ... 388

Xanthoma Multiplex ... 379

ILLUSTRATIONS.

Adhesions Between Cervix Uteri and Vagina ... 77
Complete Double Ureter ... 384
Occipital Meningocele ... 95, 97

PROCEEDINGS

OF THE

MONTREAL MEDICO-CHIRURGICAL SOCIETY

SESSION OF 1892-93.

OFFICERS FOR THE SESSION:

PRESIDENT	DR. JAMES STEWART.
1ST VICE-PRESIDENT	DR. E. P. LACHAPELLE.
2nd VICE-PRESIDENT	DR. JAMES BELL.
SECRETARY	DR. KENNETH CAMERON.
TREASURER	DR. JOHN A. MACDONALD.
LIBRARIAN	DR. T. D. REED.
COUNCIL	DR. F. BULLER, DR. F. W. CAMPBELL. DR. T. G. RODDICK.

PROCEEDINGS

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, October 28th, 1892.

J. B. McConnell, M.D., in the Chair.

Dr. W. S. Morrow and Dr. A. E. Orr were elected members.

The resignation of Dr. J. B. A. Lamarche was accepted.

Interscapulo-Thoracic Amputation. — Dr. Shepherd exhibited a patient from whom he had removed the upper extremity, performing an interscapulo-thoracic amputation. The patient was now in perfect health. This case had already been reported to the Society. The patient was discharged from hospital well in three weeks.

Inguinal Colotomy.—Dr. Shepherd reported a case of inguinal colotomy where Maydl's operation had been performed for old and extensive syphilitic stricture of the rectum. The patient, a woman aged 35, had suffered for years from a gradually increasing stricture of the lower bowel. which had from time to time been treated by incision and the passage of bougies. So this summer, coming again under his care at the Montreal General Hospital, he advised inguinal colotomy, which was consented to. The operation, a modification of Maydl's, was performed without difficulty. An incision was made in the left inguinal region, internal to anterior-superior spine of ilium, about two inches long, the peritoneum opened and the sigmoid flexure sought for. This was easily found, the bowel pulled out, and a glass rod pushed through the mesentery or rather meso-colon. No sutures were used, the bowel being left *in situ* covered with dry dressings. At the end of four days the bowel was opened transversely with the thermo-cautery, and at the end of ten days the whole thickness of the bowel was burnt through with the thermo-cautery and the glass rod lifted out, leaving a double-barrelled opening composed of the cut ends of the bowel. After a time the ends of the bowel retracted and a satisfactory false

anus resulted. The first operation took about three minutes, the subsequent ones were performed without ether and were nearly painless. The operation is such a simple one that the merest tyro could successfully perform it if only he makes the operation strictly aseptic. The patient is at present in good health, and quite satisfied with the relief afforded by the operation. It was not strictly a Maydl's operation, as that surgeon uses sutures; rather it was Réclus' modification of Maydl's operation.

Dermatitis Exfoliativa.—Dr. Shepherd exhibited a case of dermatitis exfoliativa in a man aged 55. The eruption was very typical, and commenced first as an eczema of the legs some thirty years ago. It now involves the whole body, the back looking like the bark of an old birch tree. Dr. Shepherd stated that at one time this affection, which is sometimes called *Pityriasis Ruber* was thought to be a fatal affection, but recently opinion has changed, many cases living to old age. The patient shown was seen to be a man in perfect health; only within the last few months has the disease invaded the whole surface of the body. Dr. Shepherd said that he had at present under his care at the General Hospital another case of the same disease, but in the acute stage, the patient not being in a fit condition to be brought out. His temperature ranged from 99° to 101°, and the whole surface of the skin was intensely red and covered with raised papery flakes of desquamating skin, several quarts of scales being at times taken from his bed. In this case the nails came off and the skin of hands and feet was shed in one piece. The patients were treated with a lotion of calamine, oil and lime-water, which gave great relief.

Dr. Foley thought that the treatment suggested by Stephen Mackenzie was the best in such cases. During the acute stage an application of glycerole of lead ʒi, glycerine ʒi, water Oi, should be used; the patient should sleep between blankets. When convalescent a diuretic should be administered with or without quinine, to be followed by hypodermics of pilocarpine and vapour baths.

Dr. Lafleur asked if the case had begun with a scarlatina-form rash. He had seen a case in Baltimore which began with

a severe rash. She had had scarlatina in childhood, and the late appearances were the same as, though less marked than, in this case.

Dr. Shepherd had not seen the case in the early stage. He cited a case of a boy who had five attacks, consisting of rigors, fever and rash, and had been treated for scarlatina, but it was no doubt this disease. Quinine will sometimes cause the same condition, as in the case he had reported last year.

Fracture of Tibia in a Partridge.—Dr. Shepherd showed for Dr. Clarke, of Tatamagouche, N.B., the limb of a partridge in which the tibia had been broken and over an inch of new bone formed and united the broken ends. A piece of the original tibia, over an inch long, was coming away as a sequestrum.

Pelvic Dermoid Cyst Removed from a Woman Six Months Pregnant.—Dr. Wm. Gardner exhibited the specimen and related the following history: Patient is married fourteen years; has had three full-term children, the last seven years ago. In December, 1890, the tumour was diagnosed and operation advised. Menses absent since April 2nd, 1892. Six weeks ago, when already pregnant to four or four and a half months, had a severe attack of pelvic pain, requiring full doses of morphia. When examined, it was discovered that the tumour was adherent to the floor of the pelvis. Operation was done on October 1st. The tumour was of the left ovary, and being successfully shelled out from its bed of adhesions in the floor of the pelvis, was then easily brought to the level of the abdominal incision and tied off, catgut ligature being used. The size of the tumour was that of a medium orange. It was filled with sebaceous matter and hair, and also contained one tooth. The cyst-wall contained some leathery blood-clot. The recovery was smooth and without any interference with the course of pregnancy. The nature of the tumour and the fact that it was adherent in the pelvis rendered its removal an absolute necessity to save the patient from very great danger from the passage of the child during labour.

Stated Meeting, November 11th, 1892.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

New Members.—Dr. J. R. Spier and Dr. A. S. Wade were elected ordinary members.

Rhinolith.—DR. BIRKETT exhibited a rhinolith or nasal calculus removed from a woman aged 35, who for the past six or eight years had suffered from a chronic discharge from the left nostril. On examination, the entrance of the nostril was seen to be blocked by granulation tissue, and a probe, on being passed in one-quarter of an inch, impinged on a hard body. After reducing the temporary hyperæmia with cocaine, a body could be observed under the inferior turbinated bone, and was readily removed after being broken into two or three pieces, followed by complete relief to the catarrh.

DR. PROUDFOOT had removed a somewhat similar concretion from the nose of a child who suffered from a very fetid nasal discharge. The concretion was about the size of a marble, and he experienced some difficulty in fracturing it. The nucleus was found to be a small roll of paper. He thought that these concretions were generally phosphatic.

Carcinoma of the Ovary.—DR. LAPTHORN SMITH exhibited the specimens and reported the case, as follows :—The patient from whom I removed these two tumours was a married woman, 42 years of age, the mother of five children, the youngest of whom is 14 years of age. She has never suffered with her periods, and the menopause was passed three years ago. She had always enjoyed good health until June last, when she began to vomit constantly. In July her abdomen began to swell, and in September she first began to notice a swelling of the feet and legs. She then presented the following appearance. She was sitting bolstered up in a chair, her face dark-red in colour and almost cyanosed, her abdomen enormously distended, and her feet and legs swollen and pitting deeply on pressure. Her heart was extremely weak, rapid and intermittent, and at first I thought her a case of heart disease, gradually filling up with

water, but I failed to detect any organic murmur or evidence of dilatation. She had been vomiting incessantly for several weeks, her bowels were very constipated, and she was passing only two or three ounces of dark-red urine daily. The abdomen was so much distended that a careful examination only revealed the fact that it was full of liquid and under great tension. Neither did an examination per vaginam show any indications of the presence of a solid tumour, the vaginal vault being merely bulged downwards by the weight of the superincumbent fluid. The urine contained one-fourth albumen. Under treatment with small doses of calomel and bicarbonate of soda the vomiting was stopped, and after a few weeks further treatment with digitalis the quantity of urine secreted in the twenty-four hours rose to sixteen ounces and the albumen disappeared. The legs became less swollen, but there was no improvement in the distension of the abdomen. As her condition was serious I determined to tap her, and, if necessary, perform abdominal section. I therefore took her into my private hospital on the 1st of October, and on the following day I introduced a very fine trocar into the abdomen, half-way between the umbilicus and pubis, and thus removed two gallons and a half of straw-coloured fluid in half an hour, without the patient experiencing any faintness or other unpleasant symptoms. As soon as a gallon of water had escaped, the abdominal walls became sufficiently relaxed to permit me to feel two large solid tumours floating freely in the abdomen; when all the water had escaped, the liver could be found very much enlarged. Although I feared that these tumours might be malignant I urged their immediate removal. It is interesting to note that during the days following the tapping the quantity of urine passed in twenty-four hours rose to thirty five ounces, and became quite clear in colour. I presume that this may be explained by the removal of the pressure of the ascitic fluid which pressed heavily enough upon the kidneys to flatten them out or collapse them and so diminish the circulation through them. On the 5th of October, two days after tapping, I removed these tumours—one weighing, after the operation, seven and the other five pounds. I was assisted by Drs. Springle and Ritchie. The

peritoneum was very much thickened, and the omentum was shrivelled up like a piece of scorched leather close up to the liver, which latter organ was very much enlarged and covered with metastatic deposits, but there were no adhesions. The abdomen was flushed with plain hot water, and the wound closed with silkworm gut sutures and buried in dry boracic acid powder. A drainage tube was left in for three days, and the silkworm gut sutures were left in twenty-four days, causing no discomfort whatever. She walked out of my hospital on the 30th October, looking and feeling very much better than when she entered.

The tumours present a fairly regular and very smooth appearance, there being only here and there smooth raised patches on their surface about an inch in length. On section, the cut surface appears like pure fibrous tissue, but on microscopic examination by Dr. Bruère, the characteristic cells of carcinoma could be detected. As there were no papillary or other cysts anywhere in the structure, this is without doubt primary cancer of the ovaries, although the disease is somewhat rare. The most interesting point in the case was the entire absence of symptoms pointing to disease of the ovaries. The patient maintains that she never had the slightest pain in the region of the ovaries. Unless I had removed the fluid it would have been impossible to have recognized the presence of the tumours, and the patient would have been dead ere now.

With regard to the advisability of operating, Winkel claims that isolated primary cancer of the ovary may be completely cured by early extirpation, although it fails, of course, to produce a radical cure when adjacent organs, especially the peritoneum, have already become affected. When the carcinomatous tumour can be readily extirpated the operation will remove the source of the ascites and tension, and at least temporarily contribute to the patient's comfort. He mentions three cases which not only bore the operation well, but were improved for months afterwards. I was somewhat surprised to find the patient make such an easy recovery from the operation, although I have noticed in other cases that a diseased peritoneum tolerates interference much better than a healthy one. She had none of the usual

discomforts which generally follow an abdominal section, and would have been able, and was willing, to get up, if I had allowed her to, two or three days afterwards.

Dr. Gardner considered the case interesting and instructive as illustrating abdominal dropsy. He thought it was the rule, when the dropsy does not yield to constitutional treatment, that tapping should be performed so that a diagnosis can be made. He had not met with cases in which he could not detect the growths by vaginal examination. Extirpation of these masses often lead to latency of symptoms or symptomatic cure even though their structure may be declared to be malignant.

Dr. Bell asked what were the evidences of cancer of the liver, and if there were any lymphatic infiltrations. The tumours were encapsulated, and he would not expect them, from their gross appearance, to be carcinomatous, nor would he expect a patient who was suffering from such extensive cancer to make so good a recovery.

Dr. Smith, in reply, said that no one could see the peritoneum roughened and thickened, or see the condition of the omentum, without deciding that the condition was cancer. He thought that the enlargement of the liver and the nodular character of the organ pointed to its involvement.

Uterine Myoma.—Dr. Wm. Gardner exhibited an enormous tumour removed from a woman aged 47. The symptoms had been rapid enlargement of the abdomen since last July, with some hemorrhage. The diagnosis had been difficult, but he had inclined to myoma; the rapid growth was remarkable. The tumour was removed by total abdominal extirpation.

A Ready Method of Cultivating the Bacilli of Diphtheria.—Dr. Wyatt Johnston said that about a year ago he had given some results of the cultivation of the bacillus of diphtheria in blood serum, as (if the case is seen early) it afforded a very valuable method of diagnosis. It is known that the bacilli are distinguished by their rapid growth on albuminous substances, within eighteen to thirty-four hours after being sown they become quite distinct, while putrefactive bacteria do not attain any material dimensions in that time. The difficulty of

obtaining blood serum is so great that this method of diagnosis has not come into general use. The egg has been known for a long time to be an excellent culture medium, and recently it has been recommended by Sakarhof to cultivate the diphtheria bacillus upon it; the method he used consists in maculating slices of hard-boiled eggs, sterilized and placed in sterilized tubes. This method being somewhat complicated for general use he (Dr. Johnston) had made a modification, which consisted in obtaining a hard-boiled egg and simply cracking it at one end and removing the shell membrane, which leaves a perfectly sterile surface, and which may be inoculated with a sterile wire. Place the egg upside down in an egg-cup and leave it in a warm place. He had not as yet worked with the method sufficiently to say whether it has precisely the same diagnostic value as the growth on blood serum.

Dr. Mills asked Dr. Johnston to state briefly the symptoms in animals following inoculation. Some conditions of the throat in animals look like diphtheria, but are really not so.

Dr. Johnston said that there were two conditions known as diphtheria in animals, one in pigeons and the other in calves; they resemble diphtheria anatomically, but the organisms causing them are quite distinct. If a guinea-pig is inoculated with 0.5 c.c. to 1 c.c. of the broth-culture of the diphtheria bacillus the animal dies in from 24 to 48 hours. At the site of the inoculation there is extensive œdema and hemorrhage with, sometimes, necrosis at the point of inoculation; there is a bloody serous effusion into the pleural and peritoneal cavities, and the organs show fatty degeneration. The diphtheritic affections commonly supposed to be communicated by the milk are usually anginas due to pathogenic streptococci.

Case of Pediculi Pubis on the Scalp.—Dr. G. G. Campbell exhibited a specimen of pediculus pubis which he had found on the scalp of a child who was brought to him for a peculiar appearance of the eyebrows, which proved to be due to the ova of the pediculus; on examining the head the pediculi pubis were found. Dr. Campbell said that most authorities deny that such a con-

dition is ever found, and he had only been able to find one recorded case.

Empyœma of the Antrum of Highmore.—Dr. Birkett read the following paper on this subject:—

The frequency of occurrence of empyæma of the antrum, and that it is often regarded and treated as chronic nasal catarrh, is my excuse for presenting this subject for the consideration, and, I trust, to the interest, of the members of this Society.

Amongst the causes we have dental caries and alveolar periostitis; these are regarded by Heath, Semon, Lublinski, Fraenkel, Schmidt, Schech, Stoerk, Heryng and McBride as almost the only causes. Whereas, on the other hand, as supporters of the nasal origin of the disease we have Zuckerkandl, Zeim, Krause, Hartmann, Gougenheim and Baratoux.

That both of these sources are quite correct is supported by seven of my own recorded cases, where in five of them the cause lay in defective teeth and in two of them the trouble supervened upon an ordinary acute rhinitis, the teeth in the one case being perfectly sound, and in the other there were no teeth, the patient having worn a plate for years. So that we have undoubted proof that both these sources may be the origin of the trouble, and not that all cases are caused by dental caries or that all cases must be of nasal origin. Statistics of reported cases show that dental caries is, however, the most frequent cause. Amongst other causes may be mentioned: (*a*) Occlusion of the ostium maxillare from an hypertrophic rhinitis. (*b*) Polypi. (*c*) Syphilis. (*d*) Struma. (*e*) Traumatism. (*f*) Facial erysipelas (Schech.) (*g*) Division of the infra-orbital nerve (Langenbeck.)

According to Zuckerkandl, the condition of the mucous membrane at the initial stage of the inflammation is a general hyperæmia, with small ecchymotic spots scattered here and there. This is followed by a serous exudation, which subsequently degenerates and becomes purulent.

Of all the subjective symptoms, we find that a discharge from one nostril is the one most frequently complained of by the

patient, or, as it is most commonly called, catarrh. Next in order is the fetid smell and disagreeable taste in the mouth. In this respect empyæma of the antrum differs from atrophic rhinitis associated with ozœna, in that in the former (empyæma of the antrum) the sense of smell remains intact and the patient himself alone is conscious of the odour, whereas in atrophic rhinitis the olfactory sense is so dulled or absent that the patient becomes objectionable only to those who surround him. The discharge is large in quantity, so that several handkerchiefs are soiled during the day. The amount of discharge varies from one time of the day to another—generally more the first thing in the morning; it also varies with the position of the patient—when lying down the antrum becomes emptied to a certain extent, and when arising what has escaped flows from the nostril. The discharge is of a canary-yellow colour, purulent in character, and varies in consistency. Usually the discharge is unilateral, although there are a few recorded cases of bilateral empyæma.

Pain, as a rule, accompanies empyæma of the antrum, and varies in intensity and locality. It may be so slight as not to be complained of, and elicited only upon questioning the patient—this is especially the case in the chronic form; or it may be so violent as to be the only symptom complained of, as is usually the case in the acute forms of inflammation. The pain is located over the malar or nasal bones or in the supra orbital regions, partaking of a neuralgic character, coming on gradually, increasing until an acme is reached, and suddenly passing off. This is explained by the gradual accumulation of the pus within the antrum until it finds, suddenly, an exit. Occasionally, obstruction to the nasal respiration on one side is complained of, as in the case presented.

"In a certain number of these cases, the beginning of these symptoms can be traced to a severe attack of toothache, followed by swelling of the face, and when this history is present the diagnosis is much facilitated."—*McBride.*

The general health may be somewhat below par, the acute cases more especially so, which may be ushered in by chills, followed by slight febrile disturbance.

Proceeding next to the objective symptoms, it is well to first spray a small quantity of a 5 per cent. solution of cocaine into the affected nostril, because in these cases of empyæma, when the discharge is of an irritating nature, there is produced either an acute or chronic inflammation of the mucous membrane, attended with moderate swelling, which obstructs one's view of the middle meatus. This swelling having been reduced, our attention is now directed to the middle meatus. Here one observes a quantity of lemon-yellow coloured discharge covering the anterior extremity of the middle turbinated bone, or, if it be of sufficient quantity, may be noticed covering the inferior turbinated bone. If with a probe armed with a little cotton wool the secretion is wiped away, it will be seen that the secretion is coming from between the middle turbinated bone and the outer wall of the middle meatus, and after thoroughly wiping away all the secretion, it will be noticed that in a few minutes there is a large quantity of secretion re-collected. This accumulation may be made more rapid in some cases by turning the patient's head away from the affected side, thus facilitating the exit of the secretion. This rapid accumulation serves to distinguish it from an ordinary purulent rhinitis ; and the situation of the discharge, between the middle turbinated bone and the outer wall of the meatus, makes the diagnosis more sure than if seen coming from the inner surface of and above the middle turbinated bone, for then such cases have an associated affection of the ethmoidal or sphenoidal sinuses. The condition of the middle turbinated bone and its surroundings are next to be noticed. As a rule, the mucous membrane covering the anterior extremity has undergone a hypertrophic or myxomatous change, or there may be actual osteoid hypertrophy of the middle turbinated bone. On the outer surface of the middle turbinated bone, and about the region of the ostium maxillare, there may be a small number of very vascular polypi aggregated together, and upon their removal the escape of pus from within the antrum is noticed to be more rapid.

Corroborative evidence is furnished by the following measures:

(*a*) Percussion over the superior maxillary bone on the

affected side may elicit pain, and in some cases where actual absorption of bone tissue has taken place crackling may be felt.

(*b*) Succusion, as suggested by Frontis, is only of value where the pus is rather fluid and the antrum contains air.

(*c*) Redness of the gums on the affected side has been observed by McBride. This was noticeable in two of my cases.

(*d*) Examination of the mouth may prove the existence of defective and sensitive teeth, and in some cases—it occurred in two of mine—a small sinus is observed either in the centre of or above the alveolar ridge, and from the mouth of this pus may be seen to exude. A probe passed into the sinus will detect carious bone and sometimes enter the antrum.

Actual opening on the side of the face, close to the nasal bone, and communicating directly with the antrum, I have seen in two cases. This condition, so far as I have been able to ascertain from the literature on the subject, is not mentioned even in the so-called classic works on rhinology. This condition of itself would be positive evidence of the previously existing empyæma.

(*è*) *Exploratory Puncture.*—This may be carried out by thrusting a strong trocar through the outer wall of the maxillary sinus about the centre of the canine fossa, or by means of a suitably curved one an entrance may be effected through its inner wall just behind the anterior extremity of the inferior turbinated bone. Aspiration of the antrum through the ostium maxillare, as suggested by Hartmann, is a difficult and at the same time an uncertain method.

These last-named measures should only be used if there were any doubt as to the existence of an empyæma, and where the teeth on the affected side were sound; but should there be defective teeth, then the first upper molar should be selected, and through its posterior socket a drill be made to penetrate into the antrum.

Finally, trans-illumination, as first suggested by the late Voltilini and Cossolino, may prove a further means of corroborative evidence. This method is carried out as follows:—The room in which the patient is must be absolutely dark.

Place a small electric lamp in the mouth, and the lips are to be firmly closed over it. It is now to be observed that in case the maxillary sinus of either side be filled with purulent fluid or solid tumour the rays of light are prevented from passing through, and that that side of the face is totally dark, whilst on the non-affected side a bright glow is seen on the cheek just below the infra-orbital margin. The translucency may be modified by certain conditions. If the walls of the sinus be denser than usual, or the mucous membrane be thicker, or the cavity of the sinus be small, then the light area may not be so bright as in conditions entirely opposite. In fair persons this light area is more distinct than in dark complexioned people. If the sinus contains a cyst, the bright area is especially distinct.

The course which an empyæma may take varies: (1) If only moderate in degree it may resolve, the pus undergoing absorption—an exceptional issue. (2) Or it may end in a chronic discharge from the nose. (3) Or it may break through on to the face and leave a discharging sinus in which necrosed bone may be detected. This condition was met with in two of my cases.

Organs which may indirectly be affected by empyæma of the antrum are the larynx and pharynx, exciting reflex cough, nausea and retching. The orbit has in a few cases been involved, producing, according to Schech, protrusion of the eyeball, with atrophy of the optic nerve, and, according to Ziem, narrowing of the field of vision and glaucoma. In a case related to me by Dr. Buller, keratitis was produced, which got better upon emptying the antrum of the pus contained in it.

Empyæma of the antrum may be confounded with—(1) Foreign bodies, including rhinoliths. From this it is differentiated by the fact that foreign bodies, such as peas, beans, buttons, etc., are found chiefly in children, whereas empyæma in the child is rare. Regarding rhinoliths, on the other hand, they are very rare in children and comparatively common in adults. Then the objective symptom as ascertained by the probe will reveal the presence of a foreign body. (2) Purulent rhinitis. This generally occurs in children of a strumous or syphilitic diathesis, the corroborative evidence of which is to be found in the

general constitution. (3) Syphilis, acquired. Here one finds ulceration chiefly of the septum, and the presence of carious bone being detected by the probe. Then the history of early infection.

Treatment.—The main objects in treatment are (1) a free exit for the pus, and (2) the destruction of the pyogenic membrane in the chronic cases. The means of accomplishing the first object are four. (1) That, advocated by Hartmann and Krause, of cleansing the cavity of its abnormal secretion by syringing through the ostium maxillare. This is accomplished by the use of a suitably curved canula, as devised by Hartmann himself, one of which I here show you.

Other advocates of this treatment further advise a partial or complete removal of the middle turbinated bone. Comment on this method is hardly necessary, as it commends itself to all as unsound in surgical principles, namely, draining from the highest level of a collection of pus. The associated removal of the middle turbinated bone, either partially or in its entirety, is a painful and unnecessary procedure.

Mikulicz's method of opening through the inferior meatus is an advance of the former method ; but in many antra the floor is below the level of the floor of the inferior meatus, and thus we do not get drainage from the most dependent place. The same argument may be made against the opening of the antrum through the canine fossa, as advocated by Heath and others.

The more generally accepted method, and the one followed out in my own cases, is as follows:—Having decided which tooth is most likely to be the cause, presuming that dental caries or alveolar periostitis has been the exciting cause, this one is to be extracted—by preference the first molar. Then the drill should be inserted into the posterior socket and made to penetrate the antrum. To be sure an entrance has been effected, a dental excavator should be passed into the opening and rotated. The opening thus made is to be enlarged by means of a reamer. Should, however, there be a fistulous opening in the gum, this spot should be selected. If there are no teeth, then an incision through the gum down to the alveolus must precede the use of

the drill. In case the teeth be sound, then drilling between two of them is advisable, or let the antrum be opened in the canine fossa. Upon withdrawal of the drill, one must not be disappointed if pus do not flow out immediately, for it may not do so for two reasons: (1) The pus may be too thick and the tearing of the mucous membrane by the drill may form a valve to the opening, or (2) as shown by Giraldès, the antrum may be divided by septa of bone, and consequently a first attempt at reaching the pus might be ineffectual.

Having reached the cavity, it is next to be syringed out through the newly made opening. This may conveniently be done by Hartmann's canula or an ordinary Eustachian catheter. The solution to be used is preferably bi-chloride (1:5000), which when injected into the antrum will run out through the nostril.

The next step is the adjustment of a drainage tube, and upon the careful adjustment of the tube the successful issue of the case depends. The distance from the surface of the gum to just within the cavity of the antrum is to be carefully measured; this is well done by means of the dental excavator being passed just so far as to allow its point to be rotated within the antrum. This being ascertained, the tube should be about $\frac{1}{8}$ in. longer, so that as readily as the pus collects it may be carried off. I regard this of some practical importance, for I have seen cases where the tube has been so long as even to touch the roof of the orbit, and although the cavity was flushed out, yet no drainage took place, and the pathological process continued for months—in one case for two years, and it was only on greatly shortening the tube the case got well. As to kind of drainage tube, I use the canula of a moderate sized trocar cut down to the required length. Through the shield two small openings are made, and by means of wire passed through these openings the tube is held in position by being fastened to the neighbouring teeth.

The treatment now consists in having the antrum washed out three times daily with an antiseptic solution, preferably Listerine (℥i–℥i), as with any stronger antiseptic, such as bi chloride or carbolic acid, toxic symptoms might be induced. Every other day in the chronic cases of empyæma, when we have to deal

with a pyogenic membrane, a small quantity of hydrogen peroxide may be injected into the antrum after having just cleansed it with the Listerine solution. This treatment must be continued as long as the solution coming through the nostril remains coloured with purulent matter. When this ceases the tube may be removed, and if after its removal for several days the antrum remains clear, it may be left out permanently and the opening allowed to close. In some of the chronic cases a small curette may be introduced through the external opening and the cavity of the antrum scraped. Insufflations of iodol or iodoform or the packing of the cavity with iodoform gauze has been carried out successfully by Krause and others.

In cases where the pus has made an opening on the face, the antrum should be treated as just described, and the sinus opened, scraped and any loose pieces of bone removed, and the wound kept open by means of iodoform gauze and allowed to heal from below. Any co-existing nasal trouble, such as hypertrophy or myxomatous degeneration of the mucous membrane, or polypi, should receive treatment at the same time.

Case I.—*Associated with Polypoidal condition of the Mucous Membrane of the Left Middle Turbinated Bone.*—Mr. A. C. C., age 22, kindly referred to me by Dr. G. A. Brown, was seen by me three years ago, complaining then of a constant fetid discharge from the left nostril, which had existed for several years. There was marked pain on the left side of face and forehead, described by the patient as neuralgia. The discharge from the nostril was very profuse, several handkerchiefs being soiled during the day. The discharge was of a dark yellow colour, of the consistency of cream and purulent in nature. A dry irritating cough, with decided huskiness of voice, was complained of.

Examination of the nose showed a marked polypoidal condition of the mucous membrane of the left middle turbinated bone, with considerable thickness of the bone itself. These parts, as well as the inferior turbinated bone, were bathed in purulent secretion, and after carefully wiping it away the secretion could be seen issuing from between the middle turbinated bone and

the outer wall of the middle meatus. This secretion was found also lying on the upper surface of the soft palate, in the posterior wall of the pharynx and in the inter-arytenoidean space. The vocal cords were much thickened and congested Pressure over antrum elicited no tenderness—no dental caries present.

After having removed the polypoidal thickening, the first upper molar on the left side was extracted and an opening effected into the antrum through the posterior socket. A small spiral wire drainage tube was inserted and the cavity syringed out with hydrogen-peroxide three times a week, and with Listerine three times daily. Three months afterwards the secretion of pus had greatly diminished and the voice had become stronger. The ultimate issue of this case I have not learned, as the patient left the city suddenly and for parts unknown.

Case II.—*Empyœma due to Acute Rhinitis.*—Miss C. G. came to me in August, 1890, complaining of a severe neuralgic pain on the left side of face, with a discharge from nostril on the same side, which had existed for the past ten days, having been preceded by a severe cold in the head. The senses of smell and taste were markedly obtunded for six days during the attack of acute cold. Examination of the left nostril revealed pus coming from space between the middle turbinated bone and the outer wall of the middle meatus. The mucous membrane of both nostrils was moderately swollen and hyperæmic. Left side of the face noticeably swollen and decidedly tender in the canine fossa. No dental caries was present, as the patient had had her teeth extracted several years ago and wears an artificial set. An incision down to the alveolar edge was made, and about the situation of the first upper molar the drill was entered, opening the antrum and allowing of the escape of a teaspoonful of horribly fetid pus. The cavity was irrigated with solution of bi-chloride (1:5000) and subsequently a solution of Listerine used. Four weeks from the date of opening all discharge had ceased. A month later, when seen, the opening had firmly closed and the patient was perfectly well.

Case III.—*Cause—Dental Caries.*—Mr. F. F. E, age 36,

kindly referred to me by Dr. England, complained of a fetid discharge from right nostril, which came on four months ago, being preceded by severe pain in right side of face and head, relieved entirely when flow of pus set in. Examination of the nose showed purulent secretion coming away from the region of the anterior extremity of the right middle turbinated bone. Position of head did not materially accelerate flow of pus. The mucous membrane of the middle turbinated bone was considerably hypertrophied and hyperæmic. When pain in face set in had first upper molar extracted, thinking it was the cause of the face ache. The antrum was drilled through the space where the tooth had been extracted, giving exit to a small quantity of pus.

The subsequent treatment consisted in the syringing out of the antrum with solution of creolin (1:500), the tube being removed one month later, as all symptoms of empyæma had disappeared, and the patient has remained well ever since.

Case IV.—*Empyæma Affecting both Antra. Dental Caries as Cause.*—Miss B. consulted me a year ago in reference to a disagreeable discharge from right nostril which had existed for one week. The discharge was preceded by a most severe pain in the right side of the face, attended with swelling of the same side of the face and beneath the right eye. Relief to the pain was followed two days later by a sudden discharge of fetid matter from the right nostril. The swelling of face and beneath right eye also disappeared. The mucous membrane of the right nostril was much swollen and hyperæmic; but under the influence of a 5 p. c. sol. cocaine, the swelling was so reduced as to bring the middle meatus into view, and in the region of the outer surface of the anterior extremity of the right middle turbinated bone a quantity of purulent secretion was collected, which soon re-collected after removal.

Marked redness of the gums of the right side was observed, and tenderness elicited upon pressure over the superior maxilla.

Under ether, all the defective teeth on the right side of the superior maxilla were extracted, and the antrum opened by means of a drill passed in through the posterior socket of the

second molar. The antrum was then emptied of its purulent contents by syringing with a solution of bi-chloride (1:5000.) The treatment, as carried out by the patient herself, consisted in syringing out this cavity three times a day with a solution of Listerine (℥i—℥i) and the occasional use of hydrogen-peroxide. Two months from date of operation the discharge had ceased and tube removed. Two months later still, patient wrote complaining of the *left* side of face aching, and of a yellowish discharge from *left* nostril. Examination of this nostril shows a moderate amount of purulent secretion coming from the space between the left middle turbinated bone and the outer wall of middle meatus; this secretion does not readily re-collect after once removing it, and the re-collection is not increased by altering the position of the head. There is no tenderness in canine fossa and no redness of gums. Several defective teeth in the upper jaw left side. These were extracted and the antrum drilled into through the posterior root of the second bicuspid. Drainage tube left in opening and patient directed to syringe out antrum three times daily. Three weeks afterwards the solution syringed into antrum came out perfectly clear, and continued to do so for several days; the tube was then left out and opening allowed to close. Three months later the patient was still perfectly well.

Case V.—*Empyœma Associated with Necrosis of the Superior Maxilla.*—Mrs. W. kindly referred to me by Dr. J. H. Bell.

Four years ago this patient suffered from severe pain in the left side of face, accompanied by considerable swelling; this was followed by a discharge of matter into the mouth from the neighborhood of a defective tooth in the left side of the upper jaw. This tooth (first molar) was extracted, and since then a purulent discharge has continually come from the site of tooth, as well as from the left nostril. Two years later the face again swelled up and broke out on the left side of face close to the nasal bone and just below the left eye. This has continued to discharge ever since. About half an inch to the left of the middle line of the nose, and half an inch below the infraorbital

margin is a sinus whose opening is surrounded by granulation tissue. A probe passed into sinus has a direction downwards and outwards, touching carious bone. Opposite the situation of the left upper first molar is another sinus extending upwards for one-eighth of an inch and coming in contact with carious bone. In the left nostril, just behind the anterior extremity of the inferior turbinated bone, is a small button of granulation tissue, and a probe bent at right angles passes outward for one-quarter of an inch and comes upon necrosed bone. Springing from the outer side of the left middle turbinated bone is a polypus of moderate size reaching to just below the level of the edge of the middle turbinated bone. A moderate amount of purulent secretion is seen covering the polypus and adjacent structures.

This polypus was first thoroughly removed and then the antrum wus drilled into through the small sinus in the alveolar process. As soon as opened, a probe could be passed readily from the opening in the alveolar process out through the opening on the face. A drainage tube was inserted and syringing with a solution of bi-chloride (1:5000) used. Later on Listerine was used.

The amount of discharge gradually lessened, and in order to hasten the progress of the case, Dr. James Bell opened up thoroughly the sinus on the face and removed, by means of a scoop, all carious bone. The cavity was packed with iodoform gauze and dressed from time to time. At the end of a month all had healed perfectly and patient had quite recovered.

Case VI.—*Empyœma due to Dental Caries; Method of Examination.*—Mrs. McD, age 32, complained of a cough which had troubled her for past year; generally worse after having lain down for a short while, and unattended with any expectoration. For the past month has noticed a discharge from the right nostril which had an odour so disagreeable as to nauseate her. During this time suffered a good deal from neuralgic pain over the right eye and about the right side of nose; this pain is always increased by a cold in the head.

Careful rhinoscopic examination anteriorly reveals no purulent secretion about the right middle turbinate, but posteriorly a

considerable quantity is seen lodged on the floor of the inferior meatus and extending upwards to the posterior extremity of the middle turbinated bone on the same side. Trans-illumination shows dark area under right eye.

The right upper jaw reveals a small fistula opposite the second bicuspid, at the bottom of which carious bone is detected; root of tooth is still present; the gum on this side is decidedly hyperæmic; no tenderness on pressure.

Under ether, this root was extracted and entrance into antrum effected through original site of first molar. Syringing of antrum through this opening brought out a large amount of greenish coloured, thick, very fetid secretion.

Subsequent treatment was such as has been followed out in the foregoing cases, and the result has been the complete cessation of the cough and arrest of the discharge.

Case VII.—*Empyœma following Acute Rhinitis.*—Miss H., five days before date of consultation, suffered from a severe cold in head, followed two days later by left side of face becoming swollen and painful, the pain beginning at the left side of the nose and extending along the eye-brow of the same side; the eye on the affected side was inflamed and painful. The symptoms increased for two days, when on awakening in the morning found a bloody and fetid discharge coming from left nostril, and the intense pain and sense of fulness on that side of the face had entirely disappeared.

Examination of the nose showed a large collection of yellowish coloured secretion, tinged with blood, just at the anterior extremity of the left middle turbinated bone. There are no teeth they having been extracted some years ago. The mucous membrane on the alveolar process is markedly hyperæmic. Trans-illumination shows a dark area beneath left orbit.

The antrum was opened in the usual way and a moderate amount of very fetid discharge syringed out. Although it is only two weeks since the operation the discharge has ceased and the symptoms have all disappeared.

Discussion.—Dr. Major said that the paper covered the ground so fully that there was but little to add. He had,

several years ago, tabulated 189 cases of myxomatous polypi, and among them antrum disease occurred thirteen times; more recently he has had ten cases, seven having myxomatous polypi and the remaining three hppertrophy of the turbinated bone. The origin of the disease is no doubt from dental causes even though the teeth may appear good, and whether it may be secondary to nasal disease, or that nasal disease follows antrum disease, is not settled. As to symptoms, the old classical appearance of deformity of the face is not now looked upon as a necessary feature; the odour of the pus is perfectly characteristic, and is not at all like that due to syphilis; another symptom is the redness of the gums, and is important, at least as corroborative. He fully agreed with everything Dr. Birkett had said about surgical treatment. He uses a steel-worker's drill, which is reduced to fit a dental engine; the operation takes two or three seconds, and is entirely painless. He looks upon the drainage-tube more as a means for washing out the cavity than simply for drainage. He then proceeded to explain the kind of tube he is in the habit of using; after the opening has been made, a wooden plug is introduced into it and a plaster cast is taken of the mouth and teeth, and upon this model a tube, which exactly fits the opening, is made.

Dr. Shepherd had seen three cases lately, two having had sinuses above the pre-molar tooth; he removed the tooth and scraped through into the antrum with a Volkman's spoon. He did not see the use of so many instruments, and thought too much stress was laid upon the washing out of the antrum; in empyæma of the thoracic cavity a general washing is done once only.

Dr. Buller quoted a case of iritis following the operation by a general surgeon, and thought that the success of the special surgeon was entirely due to his attention to detail and to the instruments he uses.

Dr. Proudfoot fully agreed to the necessity of frequent washing of the cavity, for the cleaner the parts are kept the better for the patient.

The Late Dr. Geo. Ross.—The following resolutions of regret at the death of Dr. George Ross were proposed by Dr. F. J. Shepherd, seconded by Dr. A. Proudfoot, and carried by a silent standing vote :—

"*Resolved*,—That this Society has learned with the profoundest sorrow of the death of Dr. George Ross, a past-President and one of its foundation members. Dr. Ross's wide clinical experience and intimate knowledge of disease, combined with his remarkable powers of observation and judicial criticism, made him a most valuable member. The various papers and reports contributed by him from time to time to this Society were always received with the greatest interest and listened to with the closest attention.

"*Resolved*,—That Dr. George Ross' death, at the early age of 47, is a grievous loss to the medical profession of Canada, of which he was so great an ornament, and in which he exercised so great an influence, not only as a clinical teacher and writer, but as an active member of the various medical societies and corporations in whose work he took such a prominent part.

"*Resolved*,—That a copy of these resolutions be sent to the relatives of the late Dr. Ross and to the daily press."

Stated Meeting, November 25th, 1892.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

New Members.—Drs. H. D. Hamilton, N. D. Gunn and J. G. Adami were elected ordinary members.

Dislocation of the Eleventh and Twelfth Dorsal Vertebræ.—Dr. ARMSTRONG brought before the meeting a man upon whom he had operated for this injury. Last September, the patient while driving under a gateway was doubled up between the top of the gate and his load. On entering hospital on examination a distinct interval of one and a half inches could be felt between the spines, just as if one had dropped forward. There was no paralysis but marked pain and hyperæsthesia, patellar reflex and ankle clonus absent, and no loss of control over the sphincters of the bowel or bladder. On the third day (the patient having up to that time refused to allow anything to be done), he was etherized, and after an unsuccessful attempt was made to reduce the deformity, Dr. Armstrong cut down and found that the articular processes of the eleventh vertebra instead of being behind the twelfth had slipped up and become caught, but on bending the man forward he managed to get them back into place. The immediate result was the relief of the pain and hyperæsthesia, but the patellar reflexes are still absent. He had last summer met with a similar case in which on failing to reduce the deformity he had cut down, but found a fracture with injury to the cord. Shede has reported a number of cases and recommends cutting down and finding out the exact condition; if the cord is much injured nothing can be done, but if spicules of bone are removed a better result may be expected than if they were allowed to remain.

Dr. JAMES BELL emphasized the necessity of early operation in such cases. Experience has shown that not infrequently pressure may be removed and the integrity of the cord restored, while if left alone softening would follow. He does not even despair of cases in which there is extensive injury. He had operated upon dogs and found that the cord

can be stretched, but suturing is almost impossible on account of the soft structure. Prof. Maydl, of Vienna, has been making similar experiments, but his reports are not favourable. He (Dr. Bell) thought that it is just as bad surgery to leave such a case to nature as it would be to leave a case of intestinal obstruction.

Excision of the Wrist.—Dr. Armstrong presented a man from whom he had removed the wrist joint for tubercular disease. The case was instructive as illustrating the amount of motion that can be obtained, flexion and extension are well performed, and the hand is not in the least œdematous. All the carpus, except the pisiform bone, the ends of the radius and metacarpal bones were removed, but unfortunately the disease has gone on in the pisiform bone and it will have to be removed.

Multiple Aneurism; Aneurism of Superior Mesenteric; Abdominal Aorta; Right Subclavian and dissecting Aneurism of Aorta; Cirrhotic Kidneys.—Dr. Finley exhibited the specimens from a case of multiple aneurism. The subject was a female, aged 48 years, rather thin, much blanched and with slight œdema of the lower extremities. A considerable quantity of partially clotted blood was found in the peritoneal cavity. There was an aneurism of the superior mesenteric artery about an inch from its origin, lying behind the pancreas, third portion of the duodenum and the mesentery. On section the wall of the vessel was surrounded by recently clotted blood, bounded by the above named structures and communicating with the peritoneal cavity by a small opening on the right side of the mesentery. A true aneurism of the superior mesenteric artery was thus formed which had evidently recently ruptured, first into the surrounding structures and later into the peritoneal cavity. A small sacculated aneurism of the abdominal aorta arose just to the left of the cœliac axis, and was lined with laminated decolorised fibrin. A dissecting aneurism forming a firm, solid mass in front of the thoracic aorta and alongside the œsaphagus arose an inch above the cœliac axis and passed up as far as the bifrucation of the trachea, where it terminated in a blunt conical end. This mass was traversed by an irregular channel containing blood; its wall was formed of a distinct layer formed by the outer coat of the aorta and

was lined with a reddish-colored thick adherent layer of fibrin. A fourth aneurism was found on the anterior wall of the subclavian artery an inch in diameter and lined with a thick layer of laminated decolorised clot.

The aorta presented a few gelatinous raised plaques, but no calcareous change. Both kidneys were small, the right weighing 110 grams and the left 100, and presented the microscopic and macroscopic appearances of fibroid change. The heart weighed 350 grams. The left ventricle was thickened, the anterior papillary muscles transformed into a fibroid mass, and the coronary arteries showed a few irregular areas of atheroma. The other organs were normal. The brain was not examined.

Dr. Shepherd, who had had the patient under observation, gave the following history: For two years she had been troubled with dyspeptic symptoms, with gradual weakness and emaciation. Six weeks before admission she began to suffer from abdominal pain of a continuous gnawing character and occasionally referred to the back. Three weeks later she suffered from persistent vomiting.

On admission, August 15th, somewhat emaciated, muscles small and flabby. Vomits frequently without any relation to taking of food, and with relief to pain. A pulsating tender mass about the size of a hen's egg is felt two inches above the umbilicus and half an inch to the right of the median line, and readily moved from side to side. Urine normal.

There was a clear history of syphilis, alcoholism and rheumatism.

An exploratory incision was made by Dr. Shepherd on August 17th, and on pushing the finger well down toward the vertebral column a pulsating sessile aneurismal tumor was found in front of the aorta and evidently connected with the superior mesenteric artery. The abdomen was closed and good union took place on September 5th, the pain which continued after the operation greatly increased and the tumor increased in size. Death took place rather suddenly on September 11th, the patient becoming blanched and pulseless.

Dr. Shepherd remarked that he had refrained from tying the artery above the aneurism owing to the probability of causing gangrene of the intestine, as this vessel supplies all

the small intestine and half the large. He also remarked on the rarity of aneurism of the superior mesentric artery, the usual vessel affected being the cœliac axis. The other aneurisms had not been recognized before death.

The PRESIDENT remarked that it was most fortunate that Dr. Shepherd had refrained from tying the mesenteric artery. Last summer he had seen two cases of plugging of the mesenteric arteries followed by gangrene of sixty-nine inches of the bowel, death having occurred in thirty-six hours. The diagnosis had been peritonitis.

Double Nephro-lithotomy.—Dr. JAMES BELL exhibited calculi and gave the following history :—

A. B., aged 45, was admitted to hospital in January, 1892, for calculous pyelitis of the right kidney and stricture of the deep urethra. The stricture was first treated by internal urethrotomy, and the right kidney operated upon in March, 1892 (nephro-lithotomy), a large branched calcalus being removed. The patient recovered satisfactorily without bad symptoms, but the urine never became quite clear, and after the wound had healed and the patient allowed up the amount of pus in the urine increased. Pain in the bladder was complained of, but exploration failed to discover any stone. The patient was discharged in May, but returned in October weak, pale, ill and feverish, with evident pyonephrosis of the left kidney. The kidney was opened, six medium-sized calculi, with much calcareous debris and many fragments of stone removed with nearly a pint of pus. The operation was not prolonged nor difficult and the patient was sent back to the ward in good condition. For fifty-four hours after the operation not a drop of urine was secreted ; the symptoms were great restlessness, pallor, vomiting, headache and a small rapid pulse (150) ; the general symptoms resembled those in a patient suffering from exhausting hemorrhages. The loins were cupped frequently, normal saline solutions infused beneath the skin daily and hypodermic injections of Tr. Digitalis given from time to time. From the time of the first secretion of urine the general symptoms improved and within a week the patient's condition was excellent, and now, a month after the operation, he is passing daily 40 to 50 ounces of clear

urine, containing only a trace of albumen, and the wound is healing rapidly.

The noticeable features of the case are prolonged suppression of kidney function and the spontaneous product of stones in the kidneys. Double nephro-lithotomy for calculous pyonephrosis followed by recovery is also comparatively rare.

Dr. SHEPHERD said that this case showed that we should not too hastily remove a kidney, for if this man had had his kidney removed last winter he would not have lived, as the remaining kidney could not have performed its function for the whole body.

Dr. SMITH asked if ether had been the anæsthetic used, as he understood that suppression of urine often follows the use of ether, he had never heard of such an occurrence after the use of chloroform.

Dr. BELL said that he had never observed suppression after ether, but there are numbers of deaths after operation on the urethra where chloroform had been used.

Dr. G. G. CAMPBELL had never seen suppression after ether, in fact he had frequently seen an increased amount of urine.

Excision of the Wrist.—Dr. BELL exhibited the forearm and hand of a woman aged 44, whose wrist he had excised in January, 1887, for tubercular disease; he had removed all the bones of the wrist joint except the pisiform; the result was quite a stiff wrist, not nearly so good as in Dr. Armstrong's case. Dr. Springle had obtained the specimen from the dissecting room.

Ovarian Abscesses.—Dr. ARMSTRONG exhibited the specimens and said that the patient from whom they were removed had given a history of recurring attacks of peritonitis for ten years, and for the last year has been in bed; she came to the hospital with her pelvis full of fluctuating masses. The chief point of interest is the extreme degree of adhesions between the intestines. There was free oozing, after operation there had been no obstruction to flatus or faeces, and the patient made a good recovery.

Dr. SMITH had been at the operation and observed the great difficulty in detaching the adhesions. This condition is set up in many young women by gonorrhæa, and such cases should not be left long with the pus leaking from the tubes. He had

an opportunity of re-opening a patient in whom he had used the thermo-cautery for bleeding, and eight or ten feet of the intestines could be lifted out in a mass. Yet that patient is in good health and her bowels are regular.

Stated Meeting, December 9th, 1892.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

Paramyoclonus..—DR. STEWART exhibited a middle aged patient, who has been affected with a peculiar myoclonic trouble for upwards of fifteen years. The spasms which are almost constantly present are partly clonic and partly tonic in character. They affect the muscles of the neck, face and trunk only—the extremities being free.

Dr. LAFLEUR asked if there was any hereditary history and if the case might be one of senile or Huntingdon's chorea.

Dr. STEWART replied that as far as he could ascertain there was no neurotic family history. It was not a case of Huntingdon's chorea, which is characterized by the sliding, jerky movements in walking and which are entirely distinct from the movements in this case.

Acute Hæmorrhagic Pancreatitis with Fat Necrosis—Glycosuria; Symptoms those of Peritonitis.—Dr. FINLEY exhibited the specimens and stated that the case had been looked upon as one of peritonitis. At the autopsy there was no evidence of peritonitis or obstruction. A distinct mass in the position of the pancreas was felt and on removal the organ was seen to be greatly enlarged, weighing 380 grams. On section the gland was studded with numerous purplish-colored hæmorrhages, varying in size from a small pin head to one-fourth of an inch in diameter. A number of small round opaque white areas, like tallow, representing fat necrosis, were present on the surface of the gland and a few scattered through its substance. None of these were larger than the size of a split pea. There was no fat necrosis in the omentum, but a few small areas in the immediate neighborhood of the pancreas. Some of the fat lobules were surrounded by a fringe of this necrosed fat. There was a small thin patch of lymyh lying on the surface of the organ. The mesenteric and splenic veins were normal.

A specimen of the urine analysed by Dr. Ruttan was found full of mucin, no albumen, sugar 1.66 per cent., no acetone, no diacetic acid, urea 8.5 grs. to fl. oz., bile pigments and bile salts in excess. The usual symptoms of this affection were those of peritonitis. One of the most interesting features of the case was the presence of sugar in the urine, and so far as he could ascertain no previous mention of this was recorded.

In view of recent investigations on pancreatic diabetes it was not unlikely that sugar might prove to be a constant constituent, and if so would be a valuable diagnostic sign. The presence of bile pigment might perhaps be referred to pressure on the common bile duct by the enlarged pancreas.

Fat necrosis has been frequently noticed in hæmorrhagic pancreatitis, but its significance is not altogether clear. It has been explained by some as due to trophic changes from interference with the nerves of the solar plexus, and by others it is regarded as due to pressure interference with the vascular supply.

REPORT BY DR. J. G. ADAMI.

Upon section the pancreas as a whole was of darker colour than usual, and presented several blackish blood stained areas varying in diameter from 3 to 12 millimetres. That organ was surrounded by a moderate amount of fat, having an abnormal appearance, for scattered over its surface and through its substance were small whiter masses, differing also from the rest of the fat by their opacity. The periphery of the gland was altered, there being no well defined boundary between the gland and its investing fatty tissue.

Microscopic examination showed that the gland had undergone much chronic degenerative change; it was fibroid, and presented abundant evidence of atrophy of the panereatic follicles. This was especially marked towards the periphery. Here were numerous small regions in which fat cells replaced the atrophied gland tissue. The hæmorrhages into the gland were of sufficiently long standing to have permitted the staining of the cells of the affected areas with blood pigment. Sections made by the paraffin method and stained with hæmatoxylin showed well the extensive fat necrosis, both within and around the gland. The necrosed fat cells con-

trasted clearly with the unaffected in that they took on a diffuse cloudy stain.

It was noticeable that while there were evidence of acute inflammation here and there throughout the fatty tissue, there being slight infiltrations of small round cells between the fat cells, nevertheless, these inflammatory foci were not in direct association with the necrosed areas. Between the necrosed cells no infiltration was discernable. The extravasated lencocytes lay between clear unaffected cells at some little distance from the patches of necrosis. In this the sections resembled those brought recently before the Pathological Society, of London, England, by Dr. Rolleston (*British Med. Journal*, Oct. 22nd, 1892, p. 895), and differed from the description generally given (Fitz. *Med. News*, Feb. 23rd, 1893.)

Thus the sections suggest forcibly that the pancreas in this case had been the seat of long continued changes. The fibroid degeneration, the atrophy of the pancreatic cells proper, the presence of fat replacing the atrophied tissue, all point to this conclusion. The hæmorrhages and the small foci of inflammation are evidences of more acute disturbance of the organ during the days immediately preceeding the fatal issue. In the absence of satisfactory observations upon the rate at which fat necrosis proceeds it is not possible to state with certainty whether this necrosis is associated with the acute lesions of late date or whether it had preceded these in its onset. This case, at least, does not show us that the necrosis is a direct result of acute inflammation.

Dr. James Bell said that he had been hurriedly summoned to the hospital to see the man who was supposed to be in an advanced stage of peritonitis. History given was that on Tuesday night he had been awakened by a cramp in the stomach, but he went to work on Wednesday morning, but was compelled to go home by the pain in the abdomen. When brought to the hospital there was great pain with distention and tenderness of the abdomen, inability to move the bowels, vomiting and, in fact, all the signs of a general septic peritonitis. He (Dr. Bell) considered the case hopeless and was greatly surprised at the result of the autopsy.

Dr. J. A. MacDonald had seen the case before he went into hospital and thought that it was one of peritonitis; one feature

was the great difficulty in passing urine and the diminution of the quantity.

Dr. LAFLEUR referred to a similar case that had been under the care of the late Dr. Ross and had been reported before this society (MONTREAL MEDICAL JOURNAL, vol. 17, page 380). The patient had suffered for a time from obscure dyspeptic symptoms and one day was suddenly taken ill with symptoms of general peritonitis and died. The conditions found were the same, though more intense than in this case, some of the hæmorrhages were recent, while some were old and almost fibroid. He could not say if there had been fat necrosis, as that condition was not recognized at the time. Fitz, of Boston, has written more than anyone else on the subject of fat necrosis, and in performing coroners' autopsies has found that a number of sudden deaths in the streets were due to this cause. He (Dr. Lafleur) asked if the veins in the splanchnic area were dilated, for he thought if such was the case the pressure on the cœliac ganglia might have been the immediate cause of death.

Dr. SMITH asked if there were other hæmorrhages throughout the body, and how was it known that the spots were fat and not transformation of blood clot into fibrous tissue. Could the hæmorrhages be due to septicæmia.

Dr. FINLEY, in reply to Dr. Lafleur, said that the veins of splanchnic area were not dilated. In reply to Dr. Smith, said the spots had been analyzed and found to contain stearine and fat crystals, they were distinctly fatty and not fibrous.

Case of Symphysiotomy.—Dr. SPRINGLE read the report of this case which appeared in the January number.

Dr. WM. GARDNER congratulated Dr. Springle for having performed this operation for the first time in Canada. It is a procedure that is bound to become popular, and is another of the revivals in surgery brought about by the introduction of antiseptics.

Dr. SMITH thought the operation a safe one and presented but few difficulties. He understood how that it will increase the total circumference of the inlet, but did not see how it would increase the antero-posterior diameter.

Dr. SHEPHERD thought that a future pregnancy might be affected. He had in his possession several pelves in which the

joint is ossified, and thought that after the operation the same condition might be induced.

Dr. LOCKHART had assisted Dr. Springle, and when he first saw the patient she had been in labour twenty-four hours. The subject for hesitancy was whether the child should be removed by cæsarian section or symphysiotomy (craniotomy not being thought of). The former procedure would have necessitated the removal of the patient to the hospital, thus causing further delay.

Dr. GORDON CAMPBELL said that there was no difficulty in showing that the antero-posterior diameter was increased. Taking a line drawn from the promontory of the sacrum to the symphysis pubis as the diameter of a circle passing through these points, after the operation this line will be no longer the diameter, and it is a mathematical law that any straight line drawn in a circle, other than the diameter, is less than the diameter.

Case of Symphysiotomy.—Following is the report of a case read by Dr. SPRINGLE, and referred to on page 32 :—

Mrs. M. L., I-para, aged 25, of Irish parentage, gives the following history: She has been healthy up to her marriage, four years ago; since then to the date of her pregnancy she has suffered from what a local gynæcologist pronounced to be pyo-salpingitis. However, she became pregnant and appeared to do well.

On the 4th inst. slight labour pains were experienced and the liquor amnii began to flow away. I saw her on the morning of the 5th, and labour was then active, but the os uteri not fully dilated. The pelvis was found to be contracted. At 3 A.M., dilitation being complete, with no descent of the fœtal head, it was thought expedient to use the forceps. Dr. Gordon Campbell anæsthetized the patient, and a thorough examination of the pelvis and contents was made. The head had not engaged and was large. The inlet was circular, with a true conjugate of 75 mm. The succeeding diameters in the pelvic cavity were correspondingly diminished, the small space between the tuber ischii especially so. An attempt at extraction with forceps was unsuccessful. Undue violence was avoided. Crying of the child in utero

was distinctly heard by those present. At 9 A.M. Drs. Lockhart and Kenneth Cameron saw the case. The uterus was then tightly contracted upon the child, who head was tightly filling the inlet. It was easily seen that the pelvis was too small to extract, and symphysiotomy was decided upon.

A medium incision over the symphysis, extending three-quarters of an inch above this and passing slightly to the left of the clitoris, was made down to the bone. A vulcanite rod in the urethra drew it over to the right and depressed it away from the incision. Above the pubis the incision was deepened until the loose cellular tissue was reached. The left forefinger was then passed behind,and the position of the urethra being ascertained, the smyphysis was cut through. The two sides sprang apart, leaving an interval of over one inch. A pad was placed over the wound and the fœtus rapidly delivered with forceps by Dr. Lockhart, proper support being given laterally to the pelvis. The child was in good condition and not disfigured by the instruments.

The total time was one hour and a quarter from the commencement of the operation until all dressings were completed.

The measurements of the child's head are:

B. P	= 94	mm. in diameter.
F. O	=120	" "
M.O	=145	" "
B. T	= 88	" "
Shoulders	=155	" "
Circumference of head.	= 33.5	cm.
" shoulders.	= 40.5	"
" hips	= 28	"
Length of child.	= 53	"
Weight.	3629	grms.

Both mother and child have done well since. There is considerable pain about the left sacro-iliac synchondrosis, due, I believe, to rupture of the anterior ligaments.

Symphysiotomy, or division of the pubic symphysis, has lately been brought prominently before the American profession by Dr. Robt. P. Harris, of Philadelphia. On Sept. 20th he read an exhaustive and admirable paper upon the subject before the American Gynæcological Association, setting forth the many claims advanced and good results obtained by Italian obstetri-

cians, notably Drs. Morisani and Nori, of Naples, and the adoption of the procedure by Professors Leopold, Freund, Porak and others. The operation is becoming popular on the continent, but, as yet, has not gained a foothold in Great Britain.* To Prof. Morisani is due the credit of perfecting this operation. His successes have dispersed the many objections to it, of Sigault, its originator's time.

The first case in America is reported by Dr. Jewett, of Brooklyn, on the 30th September. Drs. Barton Cooke Hirst and A. S. Broomall have each reported one since. All were successful. The operation is limited to a true conjugate diameter of not less than $2\frac{1}{2}$ to $2\frac{3}{4}$ inches. It is not applicable to certain deformed pelves (Robert Naegele, coxalgic anchylosis); nor should it be applied to cases of cancerous or other growths in the pelvis.

It is claimed that the operation will be conservative in the child's interest to the extent of the abandonment of craniotomy. Moreover, it is said that symphysiotomy will supersede the Cæsarian operation, when the latter is performed for the lesser degrees of contructure to which symphysiotomy is applicable.

Dr. Harris, in his paper, gives interesting statistics in a tabular form of 44 cases collected from various continental sources. One mother died from metro-peritonitis, not supposed to be due to the operation; five suffered from vesico-vaginal fistulæ. With these exceptions the recoveries were perfect; the longest period of confinement to bed being 35 days, The results to the children showed five deaths; of these three were born dead (?), the remainder living for some time after birth. All children dying before three days being counted in the mortalities of the operation.

The greatest comparative size of the fœtal head to the true conjugate was 100 mm. to 67 mm. in a case of Dr. Nori's; the smallest being in a case of Prof. Freund's, of 110 to 100.

The simplicity of the operation is one of the claims advanced by its advocates. It is said that lameness as a result is very rare, Dr. Harris, in his report, not mentioning a case. The

*Since reporting the above, I see a case mentioned in the *British Medical Journal*, operated upon by Dr. Smylie, of the Rotunda Hospital, Dublin, on Nov. 22nd.

operation has been approved of by Charpentier, Leopold, Porak, Hirst and many others; and if it does all that is claimed for it, it will be welcomed by all.

Report on a Hundred Cases of Ether Anæsthesia by Clover's Inhaler.—Dr. Gordon Campbell read the following paper:—

As the title of my paper suggests, my object is to bring before the Society a report of the results obtainable by the use of Clover's inhaler in ether anæsthesia, rather than a discussion of the subject of anæsthesia in general. There are, no doubt, many members who are not acquainted with this form of inhaler, so I will exhibit the instrument. The following description is copied from Mill's article on Anæsthesia in *Treves' Manual of Surgery*:

"The inhaler consists of a face-piece with an indicator which, by rotation, may be made to point to 0, 1, 2, 3, and F on the circumference of a metallic vessel containing fluid ether; and of a bag into and from which the patient breathes. It is so constructed that when the indicator is at 0 the expired and inspired air passes to and from the bag, without in any way communicating with the ether chamber. If the indicator stands at F, the whole of the expired air must pass through the ether vessel to the bag, and at inspiration return from the bag through the ether vessel. When the indicator is at 2, half the respired air passes to and from the bag direct, the other half passes through the ether vessel, and so on for the other numbers. The air does not pass through the ether but simply through the vessel containing it, and this is sufficient to carry off a large amount of its vapour."

On commencing the administration I pour an ounce and a half of ether into the vessel and rotate the cylinder so that the indicator is at 0. The pillows are then arranged so that the patient's head lies as nearly as possible in a line with the body, that is, as it would be held in standing. The eyes being closed the inhaler is then placed on the face and tilted away from the chin so that the mouth is left free. I then direct the patient to take several deep breaths and lower the face piece in time to catch each expiration, raising it again at inspiration, and thus

fill the bag with the expired air. The usual result of taking several deep breaths now follows, the succeeding ones are much shallower than normal, and I now turn the cylinder so that the indicator stands at about a quarter way between 0 and 1, which means that the patient is getting about five per cent. of ether vapour in the air breathed.

I think it a good plan not to require the patient to take deep breaths at first, as ether always causes more or less irritation to the respiratory tract, and by beginning with a very small amount the percentage of vapour may often be rapidly increased without producing much distress. If the vapour causes no discomfort the reservoir is now slowly rotated, moving only a short distance at a time and giving a breath of pure air when necessary. At the first sign of intolerance, such as swallowing or raising the hand to remove the inhaler, I give a breath of pure air, and if this fails to quiet the breathing I turn the reservoir back some distance. Very soon a stage is reached at which the patient seems to fall asleep and regular, deep breathing ensues, enabling the ether to be turned on more rapidly, and complete anæsthesia, shown by loss of the corneal reflex and snoring breathing, follows without any further trouble. At the moment full anæsthesia is produced the muscles all over the body relax, the chin falls, and the advantage of having the neck straight is now seen, as where the head is raised too high on the pillows the chin, as it falls, allows the glottis to become closed and the passage of air into the lungs to become more or less completely blocked. If, however, the neck is not bent, placing one finger behind the angle of the jaw and raising it up at once allows of the free passage of air through the larynx. In a few cases of obstruction to the breathing this procedure is unsuccessful and attention should then be turned to the nostrils, which, in many people, under the complete relaxation of deep anæsthesia, collapse at the beginning of each inspiration. Inserting a small piece of stiff rubber tubing of the proper size into each nostril, until the muscles have regained their tone, will remedy this condition. It occasionally happens that instead of relaxation a state of tonic contraction or spasm, affecting the

whole body, follows full anæsthesia. The cause of this rigidity I cannot explain, but by experience I have found that withdrawing the ether altogether, until it passes off, is the best plan of treating it, as on recommencing the administration it is not likely to recur. Pushing the ether seems to prolong the spasm. The condition has occurred eight times in the hundred cases, but in only three of these was it at all marked. Very much less ether is required to keep up than to induce anæsthesia, hence I now turn the indicator back to midway between 1 and 2, and in fifteen minutes or so it can again be moved back, giving less and less ether as time goes on. At the beginning, too, the patient may get one inspiration of air to every three from the bag, gradually increasing the proportion of pure air.

I will now take up in order the various points of which I have kept a record, first,

The length of Time required to produce complete anæsthesia. —The average time for the whole hundred cases is 5.21 minutes, the longest being 11 and the shortest 2½ minutes. This, however, does not fairly represent the time usually necessary, as over 50 per cent. were under five minutes. It must also be noted in considering this average, that the time was calculated from the moment the inhaler was applied to the patient's face until she was ready for operation, as I consider that, from the point of view of both patient and surgeon, the actual time taken up after the inhaler is applied until the patient is ready for operation, is of more practical importance than the number of minutes it takes to induce anæsthesia, when once the breathing of ether vapour has begun. A great many persons will not breathe properly at first, and some time is spent in allowing them to become accustomed to the apparatus before the ether can be turned on to any extent; and I have included this time, although it will be seen that all cases of over six minutes duration were due to this cause and there are twenty of such. Furthermore, it must be remembered that the main point kept in view during the administration is to give the ether with as little discomfort to the patient as possible, and although this lengthens the time somewhat I have not had a single case in

which there was struggling or the patient required any restraint. My rule is, on the patient showing any resistance or crying out, to endeavour to reassure her and at the same time diminish the strength of the vapour. If this fails and struggling and screaming commences, I at once remove the inhaler from the face and, speaking sharply, order her to take the ether quietly, saying I will wait until she does so; and in all but one case this has had the desired effect, perhaps by the substitution of one emotion for another, the fear, or whatever caused the excitement, being replaced by a feeling of resentment at my want of sympathy. The failure referred to is worth alluding to. The patient, after a few breaths, began to scream, and on my removing the inhaler was so excited she could not be induced to commence again for a full hour. The idea had become firmly fixed in her mind that she had entered on what she called the "terrors of death," and that I had recognised her danger in time to remove the inhaler and save her life. Finally, however, she went under in four minutes without a cry, although she was trembling with excitement. Where a second operation has to be performed, the advantage of using no force in the first administration, and of having the patient look back on it with as little dread as possible, is very great.

Percentage of Ether Necessary to Produce Anæsthesia.—In fifty of the cases reported I have kept a record of the proportion of ether vapour, as registered by the indicator, in the respired air, at the moment of full anæsthesia, on the supposition that the air passing through the ether vessel becomes completely saturated with vapour. Estimating the proportion from this basis, I find that the average is 60 per cent.; that is, that the patient becomes fully anæsthetised before the air breathed contains two-thirds of its bulk of ether vapour. The old idea, then, that ether vapour needs to be given as nearly pure as possible must be abandoned.

Amount of Ether Consumed.—The next point I have worked out is the amount of ether consumed during an administration, and this I have obtained by noting the amount of ether used and the length of the administration in 73

cases, of which the shortest was 20 minutes and the longest was 3½ hours. The average length of administration is 91 minutes, or 1½ hours; and the average amount of ether used, four ounces and six drachms by measure (f℥iv f℥vi), that is considerably less than a quarter pound tin. The ether in a 100 gramme tin, which measures just five fluid ounces, will suffice for an administration lasting an hour and thirty minutes. About four fluid ounces are required the first hour, and two the next, and so on. There is too, roughly speaking, a relation between the body weight and the amount of ether used, but this is often disturbed by other causes which I am unable to define, but perhaps individual idiosyncrasy is a prominent one.

Vomiting during the Operation.—Vomiting on the operation table occurred four times in the 100 cases: once owing to the ether being withdrawn too soon, and once in an extremely nervous subject. The other two instances were in the same patient on two separate occasions, and were attributed to a large dose of whiskey and water taken just before beginning the ether.

After Vomiting.—I have kept a record of the vomiting occurring while the patient was recovering from the anæsthetic in the last forty cases. Fifteen of these, or over one-third, 37½ p.c. were not sick at all, seven were very sick and the others vomited from one to four times. Absence of vomiting does not necessarily mean absence of nausea, but as in most cases nausea is accompained by vomiting, we can get some idea of the relative frequency of after sickness from these figures. The amount of vomiting occurring after the patient comes out of the anæsthetic is also of practical importance in many laparotomies where tension on the abdominal walls from within is desired to be avoided as far as possible.

During the induction of anæsthesia the pulse as a rule becomes very rapid, running up to 120 or 140; at the end of ten minutes, however, it will be found to have quieted down considerably, and it finally falls to between 80–100, and is generally much fuller and stronger at the end of the administration than just before the commencement. On discontinuing the ether, however, the rate rapidly increases again.

The respirations are full and strong and average 25 to 35 to the minute. Quicker respirations mean that more ether is being given than necessary, and slower, that the anæsthesia is on the point of passing off. The rate, therefore, of the breathing, can be used as an indication of the degree of anæsthesia present.

The pupils at the outset dilate, but soon contract, and remain moderately contracted throughout. The presence of the light reflex is seen where the anæsthesia is not very profound; and contraction may thus be produced in one eye from repeated exposure when the other pupil is moderately large.

Sighing is often very marked, it occurs every 45–65 respirations, and seems to have very little significance.

As stated before, I find that patients breathe much more easily when the head is not raised on a pillow in such a manner as to bend the neck. In persons with short thick necks no pillow at all is to be preferred. Closure of the glottis is at once relieved by making extreme extension of the neck, while at the same time the angles of the jaw are drawn forward away from the neck. I have never had to use tongue forceps.

Stiff mucus collecting in the throat and interfering with respiration is easily removed by a small sponge on an old fashioned sponge holder.

In giving the anæsthetic I consider it is absolutely necessary, in order to get good results, to have a quiet room to begin in. Success, both as regards time and comfort, depends upon not exceeding the tolerance of the patient, and the noise made by the air going to and from the bag is what the anæsthetist depends upon to guide him. Any noise which would prevent one from hearing when there is some obstruction to the breathing, will prevent the proper precautions being taken in time to avoid struggling, etc. Moreover, it is found that patients who pass into unconsciousness without excitement and without a struggle, bear the anæsthetic much better during the operation than when there is a stage of excitement. The behaviour of each individual case to the anæsthetic is noted while the patient is going under, and the after conduct of the case is governed by

the knowledge thus gained. When it is at all possible then, the administration should be begun by the one who is to carry it on.

It is claimed that the effect produced by this form of inhaler is, to a great extent, due to asphyxia induced by reduction in the amount of oxygen and re-breathing of expired air; and, moreover, that the breathing of the respired air has a deleterious effect, owing to the poisonous matters eliminated in it. In order to determine as far as possible what portion of the anæsthetic effect was due to asphyxia, I gave the ether in ten cases in the following manner: one respiration of air; inspiration of air; expiration into the bag; one respiration from and to the bag; that is, in every three breaths two are pure air, and then the air in the bag is replenished each time by an expiration containing the amount of pure air in the nose and respiratory passages at the end of inspiration. The foul air in the bag is thus diluted with a certain amount of good air before it is drawn into the lungs. As two breaths of pure air are taken to every one from the bag, the effect produced by asphyxia under such circumstances must be almost nil, when we remember that the patient is breathing at double the normal rate. Now, comparing these ten cases with ten others having respectively corresponding durations, I found that in the cases where the possible effect due to asphyxia was eliminated, the amount of ether used only increased half a drachm in five ounces. Consequently asphyxia cannot be a factor of any practical importance in the anæsthesia induced and kept up in the manner described, although by allowing the patient to breathe very much less pure air in proportion to that from the bag, than is my practice, it may become of importance.

In conclusion let me sum up briefly the advantages claimed for this form of ether inhaler.

Rapidity in the production of anæsthesia combined with but little discomfort to the patient.

The small amount of ether used and the slight escape of ether vapour into the room.

The extremely slight liability to vomiting while under the influence.

The advantage to the anæsthetist of having the exact state of the breathing constantly evident to him through his sense of hearing, and the prime importance of this now that the respiration is admittted on all sides to be the most trustworthy evidence of the patient's condition, and the first function to show the approach of danger.

It is necessary to state for a proper estimate of the value of the foregoing statistics that the patients were, with three or four exceptions, all adult females, and the most of them in a private hospital where all precautions are taken to ensure success. The operation is done between nine and ten in the morning, and no food, except beef tea allowed for twelve hours before. The absence in this report of such after effects as bronchitis, suppression of urine, etc., which are usually attributed to ether, is because none were observed, although the patient was always under observation for at least ten days.

I have appended to the report a table of the individual cases from which my statistics are compiled.

Number of Cases.	Time going under, in minutes.	Percentage of ether reached at moment of complete anæsthesia.	Total length of time anæsthetised (minutes.)	Amount of ether used (fluid drachms.)	Number of times after-vomiting occurred.	Remarks
1	4	56	80	32	.....	Profound anæmia, sighing 48–65, quiet.
2	9	100	200	64	.....	Talked and cried out just before going under, but no force necessary; ether very cold.
3	4	70	140	40	.....	Stopped giving ether too soon; patient vomited on table
4	6	75	140	44	.....	Large woman.
5	4½	100	....	....	.....	Ether very cold.
6	7	75	35	20	.....	Rigidity of whole body 1 minute after abolition of corneal reflex.
7	6	62	...		...	
8	4½	45	25	20	.....	
9	4½	63	70	28	.....	Aged 76.
10	7	62	80	24	....	Very weak; required very little ether.
11	10	75	110	40	.....	Rigidity and moving hand after abolition of corneal reflex.
12	10	70	90	36	....	Kept a finger under mouth-piece going under.
13	6	50	....	....	.....	
14	4	62	....	....	....	Sighing very marked.
15	7	84	135	....	.....	Large woman: 5 p. c. ether last 40 minutes.
16	4	50	....	....	.....	
17	4½	50	....	..	.....	
18	5	50			.....	Hiccough at times, stopped by pushing ether.
19	8	....	....	....	.....	

No. of Cases.	Time going under, in minutes.	Percentage of ether reached at moment of complete anæsthesia.	Total length of time anæsthetised (minutes.)	Amount of ether used (fluid drachms.)	Number of times after-vomiting occurred.	Remarks.
20	11	70	....	....	.....	Increased strength of vapour too rapidly causing spasm.
21	10	....	..	....	.....	Removing stitches.
22	4	....	....	...	.....	
23	5	50	...	...	.....	
24	3	70	145	48	.....	Less than 5 p. c. most of time.
25	8	75	55	32	....	
26	11	...	200	68	.....	Vomited going under, just before anæsthesia complete; 6 p. c. ether after anæsthesia produced.
27	3	50	....	...	....	
28	7	....		....	.....	
29	5	....	...	....	.....	
30	6½	....	....	....	.....	Vomited on the table.
31	8	....	..	....	.....	
32	5	45	....	....	.....	
33	4	63			.....	
34	5	56	140	44	.....	
35	4	45	146	24	.....	Very slight; emaciated; breathing stopped by mucus in throat; relieved by turning on side; no ether required at all last hour, except an occasional breath.
36	5	45	50	24	.....	
37	7	50	....	....	....	
38	3½	62	75	44	.....	Large woman; used more ether than usual.
39	5	50	120	48	.....	
40	4½	45	90	40	.....	Ether given on side; elbow used. Kidney case.
41	11	63	....	....	.....	Mouth-piece not fit the face.
42	4	56	45	24	.....	Reflex from perinæum after corneal absent.
43	5	62	85	50	.....	Vomited six times at intervals while completely anæsthetised; given brandy and water just before administration.
44	6	62	...	....	.....	
45	7½	75	135	48	.....	Inhaler not fit the face—No. 41.
46	8	....	50	32	....	
47	5	50	60	26	.....	
48	3	....	45	24	.....	
49	4½	50	180	64	.....	
50	4	....	....	....	.....	
51	3	....	45	24	.....	Gave 25 p. c. ether all the time.
52	5	....	75	28	.....	
53	4	....	55	28	.....	Very anæmic.
54	3½	75	40	26	.....	Same as 43; vomited once during administration; spirits and water just before.
55	5	....	20	8	.....	Examination abdomen; umbilical hernia.
56	4½	....	60	32	.....	Same case as 55; operation.
57	5	70	60	36	.....	
58	5	....	....	....	.....	Male. Dental case.
59	4½	50	60	32	....	
60	4	....	....	....	.....	Same case as 59.
61	5	....	120	44	3	
62	6	....	150	48	3	
63	10	....	120	44	1	Mouth-piece not fit; remedied by turning end for end; pulse very slow, 52.
64	3	50	110	44	0	Gave 2 breaths air to 1 ether all through.
65	5	62	90	36	0	2 air to 1 ether; kept indicator at 1½ = 38 p. c.
66	4½	....	15	32	1	Thick mucus in throat; relieved by pulling out the pillow.
67	5	....	115	40	2	2 air to 1 ether.
68	5	..	45	20	0	
69	2½	....	150	56	0	
70	4½	....	110	44	0	

Number of Cases.	Time going under, in minutes.	Percentage of ether reached at moment of complete anæst'n.	Total length of time anæsthetised (minutes.)	Amount of ether used (fluid drachms.)	Number of times after vomiting occurred.	Remarks.
71	10	..	70	26	0	Going under commenced to scream; removed inhaler and waited until she agreed to breathe quietly.
72	4½	....	120	40	6	2 air to 1 ether: kept at 25 p. c.
73	6	....	85	41	1	Very large woman.
74	5	....	60	30	Many	2 air to 1 ether.
75	4	...	90	36	3	2 air to 1 ether.
76	3	....	90	52	0	Large woman; 2 air to 1 ether; large amount used.
77	4	....	120	48	3	2 air to 1 ether.
78	3½	..	45	24	Many	Very nervous woman; spasm of glottis at beginning.
79	7	....	90	40	5	1 ether to 2 air.
80	5	....	135	48	2	2 air to 1 ether.
81	4	....	120	48	3	
82	4	...	30	16	Many	Vomited on the table. Very nervous.
83	5½	...	50	24	3	Same as 81.
84	3½		30	16	3	
85	4	....	45	20	4	
86	3½	....	95	34	0	Some spasm and rigidity.
87	3	....	90	48	Many	Same case as 82: mucus in throat.
88	5	50	100	42	0	2 air to 1 ether.
89	3	....	85	48	2	Considerable mucus during operation.
90	4	....	105	52	Many	During administration, spasm lasting so long the patient almost regained consciousness.
91	4	...	95	56	6	
92	4	....	135	88	2	
93	4	50	135	44	0	Case described; screaming and refusal to go on for an hour.
94	5	....	20	8	0	Opening abscess.
95	4	....	120	44	1	No mucus.
96	3½	45	120	44	1	Some sighing; pulse 82 from 120.
97	3	50	50	24	Many	Urine, 8 oz. 1010.; urea 1½ grains to oz. = 12 grains
98	3½	45	90	36	0	Urine ½ oz.; loaded urates; urea 11 grs. to oz. = 5½ grs.
99	3½	60	80	34	0	Abdominal case; urine ½ oz.; urea 5 grains.
100	5	....	110	44	0	Excision of the breast.
	5·21	60	91	38	37½	Per cent. without after vomiting.

Dr. Alloway said that he had been using this form of inhaler for a long time and it has unquestionable advantages over all other forms.

Dr. George Brown had been using it for three years and agreed with everything mentioned in the paper. With men there is generally a stage of rigidity and the administration takes longer than with women. He has used the cone and Allis' inhaler, with which there is usually fear and struggling, whereas with Clover's, patients take the ether quite easily, and at a subsequent administration receive it with less fear. He thought that there was less vomiting and less depression

after administration, and he never had any ill effects during an operation, except now and then a spasm of the glottis, which is at once relieved by raising the hyoid bone and pushing forward the jaw.

Dr. Wm. Gardner was first induced to use Clover's inhaler by having seen it in Mr. Lawson Tait's practice in 1886, and has never willingly used any other form since that time. He has given up the use of a mixture of ether and chloroform and has stuck to pure ether and now sees no reason to regret it. Another advantage is the prevention of the diffussion of ether through the room, which is a great comfort to a sensitive person. He bore testimony to every word Dr. Campbell had said, and had been struck by the extremely short space of time taken by him to anæsthetize the patient, and also the rarity of vomiting on the operating table, which he thought was due to the care of the anæsthetist to the signs of complete anæsthesia.

Dr. Birkett, when resident in the General Hospital, had kept a record of eighty cases of the administration of pure ether with Clover's inhaler, and his observations confirmed the remarks of Dr. Campbell. He had used it with all sorts of patients, and it was the most successful method employed.

Dr. Bell did not think that there was any difference of opinion as to this method of giving ether, when it was in careful hands, but considered it dangerous in inexperienced hands. A case had nearly ended fatally from the neglect of one point, that of putting ether into the inhaler, and the patient was almost asphyxiated. He could not help but think that the patient must inhale vitiated air from the bag, but the precautions mentioned would reduce this danger to a minimum. He felt that the more concentrated the vapour at the beginning of anæsthesia the better, but the great danger arose in giving too much ether after the stage of complete anæsthesia had been reached, and the respiratory centre may be so blunted that it may fail to act. He admitted the advisability of giving it well diluted at the start, but it should be rapidly concentrated. He had never seen suppression of urine or bronchitis following ether, nor any pulmonary condition, except secretion of mucus.

Dr. Shepherd thought from his own observation that the

the method was valuable. He did not think that the paper referred to alcoholics, and asked if Dr. Campbell had observed tremors, amounting almost to rigors, which condition would make him stop ether and substitute chloroform.

Dr. McConnell said that every one present seemed to prefer Clover's inhaler, the chief points in its favour being the small quantity of ether used, and the rapid effects; but the latter is a matter of skill in administration. He did not like the idea of re-breathing air. It is a mistake to think that if we use a large amount of ether with Allis' inhaler that the patient gets a larger quantity than if a much smaller quantity is used in Clover's. He thought Allis' is far safer for general use.

Dr. Wm. Gardner regretted to have to record a death last summer. The patient was blanched by prolonged hæmorrhage from malignant disease. He had decided to remove the disease through abdominal incision. The patient was at first placed in the lithotomy position, and everything went well for fifteen minutes when she stopped breathing, and soon afterwards the heart stopped; but though artificial respiration was kept up for three-quarters of an hour, she died. In this case he in no way blamed the inhaler or the anæsthetist.

Dr. Stewart asked if observations had been made as to the condition of the shallow and deep reflexes.

Dr. Campbell, in reply, said that he had seen marked tremors in one case. A recent writer in the *British Medical Journal* had ascribed this condition to asphyxia, and it indicated that ether should be given in a less quantity. He agreed with Dr. McConnell that the patient requires about the same amount of ether to induce anæsthesia, independent of the kind of inhaler used. The skill in using Clover's is very much over-rated, for if one would read the article on the subject in *Treves' Surgery*, he could easily use it. He had had no experience in emergency cases. The abolition of the corneal reflex is not indicative of full anæsthesia, and the reflex from the perineum and anus is the last to disappear. At present he is trying to work out the action of ether on the secretion from the kidneys, and will give the results later on.

Stated Meeting, December 23rd, 1892.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

A Second Series of Cases of Transplantation of Skin after Thiersch's Method.—DR. BELL read the followig paper on this subject, and exhibited several cases to illustrate his remarks:

In December, 1887, just five years ago, I read a paper before this Society entitled, "*The Treatment of Ulcers by the Transplantation of Large Pieces of Skin after Thiersch's Method.*" I then described the operation in considerable detail and gave full clinical reports of the first six cases on which I had operated (the patients were also presented for examination). To-night I venture to offer some further observations upon this operation, based upon the reports of thirty-six cases operated upon in the hospital since that time. These cases are taken from the hospital books, and this series includes only those in which an operation was definitely undertaken for the purpose of healing a wound or ulcer. Minor cases in which the area to be covered was estimated at less than two square inches, and all those cases in which skin was transplanted in the course of another operation, as in the removal of small cancerous or lupoid ulcers from the face, webbed fingers, plastic operations, etc., are not included. Case 31 is an exception to the first part of this statement and was included here on account of the great age of the patient (74 years). The area to be covered for chronic ulcer in this case was about one and a half square inches.

Age—In age the patients range, as will be seen from the appended tabulated statement, from 10 to 74 years, there being six patients under 30, five of whom were operated upon for ulceration due to burns, and one for ulcerations caused by a machinery accident, seven patients between 30 and 40, two of them due to burns, seven between 50 and 60, eight over 60, and three whose ages are not noted, but all of whom were over 40 and operated upon for chronic ulcer.

Lesions—Twenty-five patients were operated upon for chronic ulcers of the legs, in six of whom both legs were operated upon at the same time. Two were operated upon for acute ulceration of the arms following burns *i.e.*, within a few months of the accident; one for extensive burns of the face, neck, hands and arms, three for chronic ulcers following burns, *i.e.*, ulcers which for months or years had ceased to make any progress towards healing, and three for contracted keloid cicatrices following burns. These cicatrices were dissected away and skin transplanted. One was in the axilla binding the arm to the side, one in the popliteal space flexing the leg to a right angle, and one in the lower part of the face and neck flexing the chin upon the breast and everting the lower lip. The first two of these were operated upon in two stages, that is, the scar first removed and the limb replaced in its normal position of extension, and the skin transplanted some weeks later, when the deep irregular spaces had become filled up with granulation tissue. Of the two remaining cases, one was operated upon for destruction of skin muscle and periosteum of tibia by machinery, and one was transplanted after removal of a large epithelomatous ulcer of the leg.

Results—In thirty-three of the thirty-six cases here reported the ulcers were completely healed—that is, covered with a good, sound skin in three weeks after operation. The three cases, 28, 33 and 36, in the appended table in which healing was not completed in three weeks will be referred to individually later on.

In the criticisms which followed the reading of my first paper on this subject, the opinion was expressed that the skin thus reproduced would not last, but that the old areas of ulceration would soon be in the same condition as before operation. I could not then answer this objection from personal experience, but I can now say most emphatically that such is not the case. In proof of this statement I have here to night the first patient on whom I operated in August, 1887. On three different occasions since the operation he has developed small ulcers upon the same leg, which absolutely refused to heal until

they were scraped and skin grafted upon them. In every instance, moreover, the ulcer appeared, not upon the skin which had been transplanted and which remained perfectly normal, but just outside the border of the transplanted area. Three cases of this series (2, 22 and 25) returned for operation a second time. In all three the ulceration had begun in the old skin outside the originally transplanted area and at the time of operation in each case more than half of the originally transplanted skin remained sound, while extensive ulceration had occurred outside its border. Cases 2 and 3 were first transplanted from an amputated leg, the operation beginning in the first one hour and in the second two hours after the removal of the limb ; no result. Case 2 of my first series was a professional beggar and returned to the hospital since I reported his case with ulceration of his leg, which, like the preceding cases, was much more extensive in the surrounding skin than in the previously transplanted area. He declined to have his leg operated upon a second time, as he depended upon this ulcerated condition to secure him his livelihood from a sympathetic public. Case 28 was that of a man aged 41 who came to hospital twenty-nine days after having been burnt with ignited varnish. His whole face, neck, forearms and hands were extensively and in places deeply burnt. He was delirious and very ill (thought to be suffering from iodoform toxication). One eye was destroyed and the other seriously damaged. On this account Dr. Buller was associated with me in the treatment of the case. Seven weeks after admission I proceeded to transplant skin, and in order to give Dr. Buller an opportunity to complete the treatment of the eye, I transplanted skin from the patient's thighs to his forearms and hands, while Dr. Buller transplanted a small area in the immediate vicinity of the eye. In three weeks the parts transplanted were completely covered with skin ; a normal result. As I had at the first operation pretty well denuded his emaciated thighs and calves, and the face and neck were still to be dealt with (with the exception of the limited area around the eye transplanted by Dr. Buller), I advised the patient to secure some person who would allow the skin to

be taken from his thighs and transplanted to the patient's face. As he was a private patient and able to pay he adopted my suggestion, and four weeks later the face and neck were transplanted with skin in this way. The young man from whom the skin had been taken was sent into the ward to allow of the healing of the thighs, when it was found that he was very ill and feverish. He had only been cursorily examined and had not been under observation at all before the operation. Further examination showed that he was in the second week of typhoid fever, from which he recovered after a very severe illness My patient in the meantime became ill and feverish, and the skin which had been transplanted necrosed and separated within ten days, and considerable areas of ulceration again appeared upon the hands which had been perfectly healed. Some weeks later another man was secured and skin transplanted again. The final result, especially as far as the face was concerned, was not perfectly satisfactory, as the skin only took in places and a great deal of contraction followed. In this connection it is interesting to note that Herr Sick, first assistant in Schede's Klinik, Hamburg, records a case (Centralblat fur Chirurgie, No. 44, 1892), in which skin transplanted to the head of a ten-year-old girl from the thighs of two healthy young men, healed completely, but in the course of three weeks it broke down and as completely disappeared. A second attempt to cover the defect with skin from a sister of the patient of about the same age was unsuccessful, and only at the third operation, when the skin was taken from the patient herself, was the operation successful.

Case 35, operated upon two weeks ago and still in hospital, is that of a ten year old girl suffering from contraction of the chin upon the chest and great eversion of the lower lip by cicatricial tissue, the result of a burn. Only a little more than half of the skin transplanted has taken in this case. The imperfect results in these two cases I attribute to the great difficulty in dressing the wound in this situation (the face), so as to retain the strips of skin in position and maintain asepsis,—in fact the latter is impossible in the immediate neighborhood of the mouth and nostrils.

Case 33, a feeble old man aged 65, with very weak circulation and suffering from asthmatic attacks, was operated upon November 18th, 1892. He had suffered from a chronic ulcer for thirty years, but about July last it became painful and began to grow hard about the edges. On admission to hospital the hard nodules about the edges were examined microscopically and pronounced to be epithetical cancer. The whole ulcer was dissected out, wide and deep, and skin immediately transplanted. The area covered was 9½ by 6 inches. The strips of skin have all taken, but granulation points crop out between the strips in places and show much less tendency to heal than in ordinary cases. In transplanting a surface so large and so uneven as this was after dissection, it was impossible to place the skin so accurately as not to leave some little spaces uncovered. These are the spaces which still show granulation between the strips of skin. On the whole nineteen-tweentieths of the surface was covered with healthy skin at the end of three weeks, and this case only differs from the others in that there is apparently not the same tendency to rapid extension of normal epithelial growth from the edges of the transplanted strips.

Case 34, a boy aged 13, met with an elevator accident on the 3rd of October last, whereby the skin, facia, part of the tibialis anticus muscle, and a large portion of the periosteum, from the middle third of the antero-lateral surfaces of the tibia were torn off and stripped down to the ankle. These parts were replaced as well as possible, but their vitality had been destroyed and sloughing followed. When the sloughs had been removed the leg was dressed carefully from time to time until the bared surface of the tibia was covered with granulations. Skin was then transplanted in the ordinary way on the 22nd of November last. The dressing was removed on the eighteenth day after operation, when the wound, which measured 10½ inches in its greatest length by 6½ in its greatest breadth, and completely encircled the leg at its inferior extremity, was found to be completely healed.

Case 36 may be briefly mentioned as a type. A young man aged 18 had both his legs burnt by falling into boiling soap in

August, 1889. Healing progressed rapidly for a time and then became gradually slower and slower, until, for more than a year before admission, no progress whatever had been made, and an ulcer remained on the posterior surface of each leg about the junction of the middle and lower thirds. Thirteen days after operation the skin was found to have taken perfectly. I am enabled to present this patient for your inspection on this the sixteenth day after operation. With regard to the operation itself, it is sufficient to say that perfect asepsis, a broad-bladed and sharp razor, and ordinary manual dexterity, are the essentials to success. No preparation of the patient nor the part to be operated upon is necessary beyond the cleansing processes which are necessary in every operation.

Several of the patients here reported were taken from the out-patient department with filthy clothing and skin, and foul-smelling ulcers, direct to the operating room (having of course had a bath and thorough cleansing of the parts to be operated upon). A single dressing of dry sublimated gauze, which is usually removed at the end of the third week, is the only after treatment necessary. When this is removed the newly developed skin is protected for a couple of weeks with a pad of gauze and a bandage. In those cases in which skin was transplanted to the face and a single dry dressing was impossible, the wound was kept moist with normal salt solution as recommended by Thiersch. This form of dressing is far more troublesome and less satisfactory than the dry dressing. All the cases here reported have been operated upon at a single operation,—that is the ulcer was scraped or dissected out and the skin applied immediately. In cases where it is necessary to dissect out a large area of skin (such as case 32) it would undoubtedly be better to apply a gauze dressing for twenty-four or forty-eight hours to stop the oozing of blood, which is considerable, and transplant the skin at a second operation.

Note.—Cases 32 and 35, which were not completely healed when the foregoing was written, have recovered perfectly,—the former in six weeks and the latter in five.

	Name.	Age	Sex	Lesion.	Result.
1	Fitzgerald	50	M	Chronic ulcer of leg	Perfect healing in 3 weeks. [twice.
2	Parizeau, Olivier	52	M	do do (both)	do Operated upon
3	Sheehan, James	39	M	Contraction of right thigh. Chronic ulcer following burn	do do
4	Foster, Ber	35	M	Chronic ulcer of leg following scald	do do
5	Hudson, Henry	19	M	Acute ulceration of both arms.	do do
6	Riley, Ann	56	F	do of leg—burn	do do
7	Hartney, John	60	M	Chronic ulcer of leg (both)	do do
8	McCabe, J	60	M	do do	do do
9	Moag, John	30	M	do do	do do
10	McLean, John	32	M	do do	do do
11	Hagan, Mary		F	do do	do do
12	Reid, John	57	M	do do	do do
13	Jones, Julia	50	F	do do (both)	do do
14	Jeff, Wm	67	M	do do	do do
15	Donaley, R	41	M	Ulcer of forearm, machinery accident	do do
16	Ramsay, Mary		F	Chronic ulcer of leg	do do
17	Hoskin	60	M	do do	do do
18	Morelle, Joseph	63	M	do do	do do
19	Hafferty, Annie	39	F	do do (both)	do do
20	Senecal, E	21	M	Contracted cicatrix of ankle after burn	do do
21	Smith, Kate	45	F	Chronic ulcer of leg (both)	do do
22	Braceland, Patrick	35		do do	do do
23	Brown, Wm	29	M	Acute burn of both arms	do do
24	Parizeau, O	56	M	Chronic ulcer of leg (both)	do [twice.
25	McVeigh, E	46	M	do do	do Operated upon
26	Duff, Rosy	59	M	do do	do do
27	Cunningham, Hy		F	do do	do do
28	Mowat, John P	41	M	Acute ulceration of face, arms and hands	do in 3 months. do in 3 weeks.
29	McGarry, Mr	69	M	Chronic ulcer of leg	do [twice.
30	Braceland, P	36	F	do do	do do
31	Piles, Mrs	74	M	do do	do do
32	Moore, Samuel	65	M	Epithelioma of old ulcer of 30 years standing	Completely healed in 6 weeks.
33	McVeigh, James	40	M	Old chronic ulcer following injury	do in 3 do
34	Valiquette, Nap	13	M	Sloughing of skin after injury	Healing complete in 18 days.
35	Franklin, Alie	10	F	Contracting cicatrix after burn	Complete healing in 5 weeks.
36	Lapthorn	18	M	Chronic ulcer following burn	Perfect healing in 13 days.

Discussion.

Dr. D. J. Evans spoke of several cases he had observed in Prof. Thiersch's Clinic at Leipsic, and the treatment was always successful.

Dr. Foley suggested that this method of skin grafting might be used with advantage in treating leucoderma and tattoo marks, by removing the affected skin and supplying new skin.

Dr. Smith asked how deep the skin had to be cut and if hair grew on the new skin.

The President—If tactile sensation was present.

Dr. Bell, in reply, said that the skin is removed down to the true skin, not into it, for the fibrous tissue will interfere with union. The hair follicles are thus not taken, and often the only means of distinguishing the transplanted skin from the normal is by the absence of hair. The sensation is as good as in healthy skin.

Carcinoma of the Peritoneum.—Dr. Adami exhibited specimens from a case of carcinoma affecting the peritoneum. The patient, a Polish Jew aged 25, was attacked by sharp epigastric pains about August, 1892. These were unremittent and were increased by ingestion of food. The abdomen was noticed to be enlarging in the first week of October, and the patient entered the General Hospital upon October 22nd, under Dr. Stewart. Upon entry the whole lower half of the abdomen was very painful, so much so that the patient was frequently forced to cry out. After admission the abdomen rapidly increased in size and the patient showed increasing emaciation of the rest of the body. There was constipation but no vomiting. The patient was tapped upon October 25th, and 120 oz. of a milky, turbid fluid were removed. The fluid was rapidly replaced, so that between this time and the death of the patient, upon December 12, the operation was repeated five times, from 115 to 170 oz. of fluid of the same milky nature being removed at each tapping. Nodular growths could be felt, after tapping, running in various directions; a prominent band ran across the abdomen about one-half inch above the umbilicus, and in the left iliac fossa a great aggregation of nodules could be distinguished. The post-mortem was performed by Dr. Martin, who forwarded the matted intestines *en bloc* to the Pathological Laboratory. The prominent band referred to above was evidently the thickened and much contracted great omentum, infiltrated with cancerous growths. The mesenteries also were greatly thickened and contracted. Numerous lenticular translucent growths, from 0.5 cm. upwards in diameter, were scattered over the peritoneal surface of both large and small intestines. These latter were matted together by soft recent inflammatory lymph. Apart from

the infiltrated mesenteries and omentum which were fairly firm, the soft, almost gelatinous growth upon the intestinal wall was most marked around the splenic flexure of the colon and again at the beginning of the sigmoid flexure. At the splenic flexure all the walls of the viscus were involved and there was marked stenosis. Here probably was the origin of the carcinoma. The mucous membrane of the sigmoid flexure and of the rectum was unaffected.

Upon stripping off the muscular coats of the intestines the lymphatic plexus was found to be injected with fatty matter and the main lymph trunks could thus easily be traced to cheesy glands lying completely involved in the mesenteric new growth. A portion of this naturally injected submucosa was exhibited. Previously Dr. Adami had examined the milky-looking ascitic fluid and had found it to be almost wholly deficient in fat, though containing a large amount of proteid, noticeably of globulin.

It would seem, therefore, that in the condition of the lymphatic system is to be found an explanation of the pseudo chylous ascites here described—a form of ascites that not unfrequently has been noted in connection with carcinoma of the peritoneum. The mesenteric lymphatic glands become surrounded by new growth, the vessels passing off from them become occluded, hence from the distended lymphatics of the intestinal wall there occurs extravasation of the fluid of the lymph, the fatty globules, as shown in this case, being left behind, and forming an inspissated mass injecting the lymphatics. Did any of the distended lymphatics undergo rupture, then a condition of true chylous ascites would be induced, such as has been found by Reichenbach in a case of lymphadenoid disease affecting the mesenteric glands.

Microscopic examination of various regions proved that the new growth, although resembling colloid cancer in general appearance, was not of this nature—the alveoli were greatly distended and filled with mucoid rather than colloid material. In some the cells could still be seen, in others the cellular elements had almost wholly degenerated and given place to mucoid material. This form is by some spoken of as carcinoma myxomatodes, but inasmuch as that term is applied more frequently to cases where stroma, and not the alveolar

contents undergo mucoid change, it is better to describe it as a myxo-carcinoma.

Cyst of the Right Ventricle.—Dr. Adami exhibited a brain presenting this condition. At the autopsy the dura mater was found to be generally thicker than normal, and adherent to both calvarium and pia mater. Upon removal of the brain a cyst was ruptured and from this poured a clear, colourless fluid. The cyst was nearly two inches across in its largest diameter (the antero-posterior), and about one and a half inches in breadth. extending from under the angular gyrus and second occipital convolution forwards to a point one-half inch behind the ascending parietal convolution in the mid-parietal region.

Dr. Adami pointed out the facts that militated against this being considered a cyst formed by the breaking down of a glioma; that it was not a hydatid cyst, and that the appearance of the walls was strongly against its being an embryonic cyst. There was left the possibility of its being the sequel of an old hæmorrhage—yet the absence of any signs of pigmentation of the walls was against this supposition. It would be necessary to harden the brain and examine microscopically before any sure statement could be made.

Dr. Stewart said that the patient was a man aged 40, and who had suffered for the greater part of his life from headaches, which came on every week or every two weeks. Three weeks before death he was seized with a much more severe headache than usual; he began to lose control over his movements; he noticed that he stumbled against various objects; vomiting came on and he became soporose from which he passed into deep coma and death. There was no disturbance of vision and the eyes, on examination proved to be normal; there were no localizing symptoms.

Hernia of an Ovary through the Inguinal Canal, in an Infant.—Dr. James Bell related the case of a female child, twelve months old, upon whom he had been called to operate for inguinal hernia which had appeared during the course of whooping cough. Frequent attempts to reduce it had failed; it was hard and seemed like omentum. On cutting down the sac was found closely covering the tumour, and on removing the sac the hernia was found to be covered with peritoneum. On

manipulation there was an obscurely hollow feeling. He (Dr. Bell) thought that it might be a volvulus and ligatured the pedicle and cut it off. After removal he was no wiser than before as to what the structure was, unless it was an ovary.

Dr. Adami said that he had examined the specimen and found that it was the ovary and fallopian tube of a young child. Towards the pedicle there were found undoubted tubercles. Here was an ovary in a false position and its weakened condition rendered it an easy prey, and Dr. Bell had done well to remove the tubercular focus.

Dr. Smith said that this was the second time he had seen this condition. Seventeen years ago he saw Mr. Golding Bird remove an ovary from the inguinal canal.

A Case of Poisoning by Chlorate of Potassium.—Dr. Wyatt Johnston gave the following history :—

The patient, a boy aged 10, on December 14th on getting up in the morning had a sore throat and did not feel well. He went to work, but during the day he felt so ill he returned home and his mother, thinking that he had quinzy, gave him a solution of chlorate of potassium to drink. The amount taken during the day was nearly two tumblersful of a saturated solution, equal to about six drachms, of the salt. In the evening Dr. J. A. Macdonald was called and found the boy in a dying condition, with intense cyanosis of the face and extremities. The autopsy was performed at the order of the Coroner. All the conditions indicated that death had been caused by the Potass: Chlorat: This salt destroys life by decomposing hæmaglobin into met-hæmaglobin. There were two ecchymotic spots, one on the inner surface of the left fore-arm and the other on the anterior surface of the right leg. On incision they were found to be due to extravasated blood of a dark coffee-brown colour and sticky consistency, and which did not change colour on exposure to air. The blood removed from the heart showed the characteristic appearances of met-hæmaglobin; it was thicker than normal, of a peculiar chocolate brown colour. The kidneys, spleen, lungs, bone marrow, and brain, showed the characteristic brown colouration; urine contained a large amount of albumen but no blood or met-hæmaglobin. Spectroscopic examination of diluted blood gave deep absorption

bands at C. and F. in addition to two paler bands at D. and E. which is characteristic of met-hæmaglobin.

The appearances might be mistaken for those found in acute infectious fevers, or poisoning by other substances which produce met-hæmaglobin, but here chemical analysis showed a large quantity of Potass: Chlorat:

Discussion.

Dr. Buller thought that the susceptibility to the action of this drug was very great in some individuals. He had met with two persons, mother and son, who could not take it at all, five grains three times a day would make them quite ill.

Dr. Bell asked if there is any hope of prolonging life when met-hæmaglobin has been formed—if there is any chance of it being eliminated?

Dr. Lafleur wanted to know whether the salt was changed in the stomach, or whether it was absorbed unchanged and circulated as such in the blood? He referred to a case he had reported—a case of poisoning by potass: bichromat:—where the symptoms and conditions found were the same as in this case. One marked feature was the intensity of the rigor mortis and the length of time it lasted, for in seventy-two hours it had not disappeared. The blood was in the same condition and the lungs contained an abnormal form of gas of some kind.

Dr. Foley said that a dermatitis associated with this condition is very rare; only one case is recorded. Two cases of an erythematous rash have been reported.

Dr. Stewart said that potass: chlorat: may cause death by rapidly inhibiting the action of the heart or by the rapid degeneration of the heart muscle, without affecting the blood in any way.

Dr. Johnston, in reply, said that very little is definitely known of the changes in the blood. The production of met-hæmaglobin is involved in obscurity, and it is now considered to be a mixture of several compounds. He could not say what changes the salt undergoes in the stomach, but it appeared as such in the urine. As to treatment, bleeding and transfusion seem to be indicated, but he cannot find if this has been practiced. It has been stated that if the blood is strongly alkaline

the change takes two or three times as long to be accomplished, so he suggested making blood alkaline, but such treatment is not supported by any clinical evidence. Intense engorgement of the brain with the altered blood seems to be the most likely cause of the rapid death.

Stated Meeting, January 6th, 1893.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

Simple Chronic Salpingitis.—DR. ADAMI exhibited two very typical specimens of this condition, which he owed to Dr. Alloway. There was no evidence of tuberculosis. Both showed marked atresia towards the uterine end of the tubes, with considerable dilatation above this, and fibroid thickening of the walls. The tubes contained sanious pus.

Papillary Cysts—Adenoma of the Ovary.—DR. ADAMI also exhibited a specimen of this condition sent to him by Dr. Alloway. There were extensive papillary growths into the cysts, which contained thin mucinous fluid.

Papillary Growths in the Lower Bowel.—DR. SMITH gave the following history: The patient, a tailoress by occupation, under my care for the last 10 or 12 years, complained of severe dysmenorrhœa, necessitating leaving off her occupation several days monthly. She also suffered from mitral regurgitation. In addition to dysmenorrhœa she complained of a pain in her left side, which persisted throughout the intermenstrual period. At last I decided on abdominal section. This was done two years ago; she made a good recovery, and the case was reported at the time. The pain, however, has not been altogether cured. Dysmenorrhœa, of course, ceased, with the exception of the first period after the operation; she has had no period since. The pain in the side and back still persisted. Soon after the operation she began to complain of passing small quantities of blood per rectum, which, at the time, I supposed was a sort of vicarious menstruation, this hemorrhage generally occurring at the menstrual period. After a time, however, she brought me some small pieces of flesh about the size of a split pea, one or several of which she

noticed herself passing each time she had a hemorrhage of bright red blood. I at first thought them little polypi or warts. On examining the rectum I could find no growth there. On making a vaginal examination, however, I thought I could discover some thickening of the left vault,—some indication of an irregular shaped mass in the left iliac region, which, owing to the extreme corpulency of the patient, was difficult to outline. Hemorrhage increased steadily; last time there was a teacupful of bright red blood. She brought me several of the pieces referred to above, and which I handed to Dr. Adami for microscopic examination. It is important to ascertain whether these are parts of a simple or malignant growth.

Dr. Adami described the small growths in question. He pointed out that they were evidently hypertrophic growths of the mucous membrane. From their structure he considered that they had developed in the lower portion of the colon, and this opinion gained support from the bright, red, unaltered blood which passed out along with them. As to the question whether they were of malignant nature or no, he was inclined to consider them non-malignant; they contained comparatively few blood vessels—their glandular structure was typical, not atypical.

Dr. Adami exhibited a specimen of ulcerative colitis from the museum of McGill College, presenting very similar papillary growths. He pointed out the frequent relationship between the production of such papillary adenomata and chronic inflammatory disturbance. The increased nutrition in the hyperæmic zone around old ulcers, for example, may originate such overgrowth of the mucous membrane in these positions. Other cases of these papillomatous growths are, however, accompanied by no definite history of chronic inflammation.

Dr. Smith expressed his satisfaction with Dr. Adami's clear description of the condition present. His observations of the patient confirm Dr. Adami's remarks. She does not resemble a patient suffering from malignant disease. When her bowels are moved she suffers pain; and if the motion is hard its passage is followed by bleeding and pieces of tissue. In one of these pieces a little blood vessel was noticed.

Dr. Stewart—Was there much hemorrhage?

Dr. Reed—And how often did it occur?

Dr. Smith—A teacupful at the last occasion. As to frequency, it was generally at the time of her periods that the hemorrhage occurred; in the intermenstrual period it occurred very seldom and very slightly. The hemorrhage did not always amount to a teacupful.

Dr. England—Was there hemorrhage before the appendages were removed?

Dr. Smith—No. In removing the ovaries I noticed a subperitoneal fibroid on the back of the uterus, which I did not disturb, not wishing to complicate the operation. The appendages were very much inflamed and thickened, the ovaries also.

Dr. A. Lapthorn Smith read a paper on Tubercular Peritonitis, with report of a case treated by operation.

It is now three years since Dr. William Gardner read a most interesting paper before this society on abdominal section for tubercle of the peritoneum and uterine appendages, reporting at the same time five cases with two deaths. We have had no discussion, as far as I am aware, on this most important topic since then, and as I had a case of the same kind to report, I wrote my paper so as to give an opportunity for a discussion on tubercular peritonitis in general, and the operative treatment of it in particular. Having seen a good many patients die from this disease, under treatment with medicines, some of which cases were diagnosed and some were not, and having made post-mortem abdominal sections of a good many children who died from this disease at the East London Children's Hospital during my term of residence there, I have always taken a great deal of interest in the progress which our knowledge of this obscure disease has been making during the last ten years, and especially in the wonderful results of abdominal section as a means of cure. How is the disease contracted? How may it be prevented? How may it be diagnosed? And what is the best treatment? These are all questions of great practical importance.

I shall only attempt to throw out a few suggestions in reply to these questions, trusting that the professors of pathology, medicine, hygiene and abdominal surgery, who may be pre-

sent, may give us from the abundance of their knowledge. In order to clear the ground for action I would like to begin by expressing my utter disbelief in the heredity of this disease, no matter where situated, whether in the respiratory organs or in the digestive organs, or even in the joints. That a great many children are infected by their tubercular parents after birth is easy enough to understand, but that a child born of tubercular parents, but never exposed to infection, either by bacilli-laden air or bacilli-laden milk, could acquire tuberculosis, is a thing of which I have never seen or heard the slightest proof. Any evidence which has so far been brought forward on this point would prove much more easily that measles was a hereditary disease. This question of infectiousness is much more important than one might at first sight suppose. For until the profession can be freed from the superstition of heredity there is little hope of tubercular diseases being stamped out, as they only can be by rigorous precautions against infection by the air or by the food.

If tubercular peritonitis then is not hereditary, as I hope no one here believes, by what means does the peritoneum become infected? Through the blood vessels? Or through the lymphatics? There would seem to be little doubt in the mind of pathologists that the lymphatics are the channels by which the bacilli gain admittance to the great lymph sac. The fact that the pleura and pericardium are connected with each other by lymphatics, and the frequency with which tubercular pleurisy and pericarditis exist as complications of tubercular peritonitis without the lungs being affected, together with the absence of bacilli in the blood, would place this contention almost beyond a doubt.

If this be the case the bacilli must be introduced by the digestive or genital tract. Let us take first the digestive tract. Although theoretically a few bacilli might be swallowed with air practically this would be a very rare cause of the disease. The large number of tubercular cattle which are killed on the farms or in small towns and even in private slaughter houses in large cities, so as to escape inspection, and the quantities of milk from tubercular cattle supplied to young children and others would furnish a bountiful supply of bacilli for the purpose of infection. Another method which might

be termed auto infection is that in which a patient with tubercular disease of the nose or mouth or larynx, or still more often of the lungs, swallows the discharge from these ulcerating surfaces laden with bacilli. They then pass through the absorbents and are at once grafted on to the peritoneal surface. Before long they are surrounded by phagocytes and are walled off by inflammatory exudation, so that they appear as little colonies or miliary tubercles. This process, however, at the same time causes adhesions of neighbouring coils of intestine, producing more or less pain, abdominal distension and interference with the processes of digestion. Strange to say this does not always cause fever; on the contrary, the temperature is often below normal.

In a large number of cases, 40 or 50 per cent. of the females at least, the disease has been found to co-exist in the tubes. At first one might think that the disease in these cases had spread from the peritoneum down the fimbriated extremity of the fallopian tubes, were it not for the fact that in a large number of cases women have been known to suffer from tuberculosis of the vulva, vagina, uterus and tubes, without the peritoneum being at all infected. So that it is much more likely that the genital tract infects the peritoneum than that the peritoneum infects the genital tract.

The prevention of the disease depends most upon the detection and slaughter, at the expense of the country, of all the tubercular animals which might be used either for food or for giving milk, and the destruction of infected sputa from the respiratory tract of human beings. Only one step farther, though rather a long one, would lead us to the state undertaking the stamping out of the disease in human beings by the gathering together in a national sanitarium of all those who are at present acting as widespread centres of infection.

How to diagnose it is a more difficult question than any; so difficult, indeed, that it is rarely diagnosed at all. Dr. Gardner frankly stated in his paper that in only one of his five cases was the real nature of the disease suspected prior to the operation. The symptoms are very variable. There may be fever in some cases, while in others the temperature may be sub-normal. There may be very great or very little pain or tenderness. There may be diarrhœa or obstinate constipation. There may be

effusion or there may be no effusion. There may be sweating, but this also may be absent. There may be tympanitis or the abdomen may be flat. There is generally nausea and anorexia, but occasionally the patient has a good appetite. There may be tumour-like formations due to adhesions of omentum and intestine, to the occurrence of which we are indebted for much of the increase in our knowledge of this subject, for it was in operating for supposed ovarian tumors, which they so much resembled, that the operative treatment of tubercular peritonitis was stumbled upon, rather than invented. Pozzi mentions that out of 96 laparotomies in which this disease was found, in 37 of them ovarian or other tumors had been diagnosed. There are only two symptoms which seem to be constant, namely, rapid emaciation and great weakness.

Where so many diagnosticians have been deceived, the only sure means of making a diagnosis in all obscure diseases of the abdomen is to make a harmless exploratory incision which will at once make the nature of the disease clear, in the majority of cases.

Exploratory incision becomes a still more valuable means of diagnosis when we come to consider that at the same time, should the disease prove to be tubercular peritonitis, it is also the treatment which so far has given the best results.

The prognosis of tubercular peritonitis depends very much upon the treatment carried out. If treated by opium as first advised by Stokes, of Dublin, in 1821, and afterwards by Graves, it was almost hopeless. Loomis, one of Clarke's disciples, says: "After weeks and months of anæmia and exhaustion, tubercular peritonitis terminates in death." Davis says: "All cases of peritonitis arising from tuberculosis are incurable. Temporary relief may be obtained by removal of the accumulated fluid, by aspiration or tapping, but the diseases which have given rise to the peritoneal trouble, being themselves incurable, there is an inevitable tendency to a fatal termination." In Ziemmsen's encyclopedia, and Pepper's system of medicine, the prognosis is regarded as absolutely fatal.

But under the treatment by surgical operation, not too long delayed, the prognosis is already favourable and bids fair to

become much more so when abdominal section is resorted to earlier.

Does the operative treatment of tubercular peritonitis ever cure? This is a question which, during the last few years especially, has been a burning one. In the light of our present experience there can no longer be the slightest hesitation in answering it in the affirmative. In the words of Dr. Osler the operative treatment of tubercular peritonitis is the most recent triumph of surgery. Kœnig, of Gottingen, gives an opinion founded on 131 cases, that by laparotomy 95 per cent. are much benefited, and 25 per cent. completely cured. Manoange gives 68 cases, of whom 13 died soon after operation, 15 disappeared, 14 remained alive at the end of six months and 26 at the end ef twelve months. Homans records two cases with recovery. Goodell has operated on four cases, of whom three recovered and one died six months after the operation. Munde has operated on three cases with one death and two recoveries. Kelly gives four cases with four recoveries. Grieg Smith has operated on two cases with one death. Pitts reports three cases with three recoveries. Imlach reports five cases with four recoveries. These make a total of 222 cases treated by laparotomy with 84 recoveries, or 38 per cent. Judging from our experience in other departments of surgery, the result in the operative treatment of tubercular peritonitis will become much more favourable when the disease is recognised earlier, or when, in case of doubtful diagnosis, an exploratory incision is made, and no time is lost with unavailing treatment with medicine. The surgical treatment of obscure intra peritoneal disease is yet in its infancy. So far, as a rule, we have only been allowed to operate when all hope has been abandoned and the patients are *in extremis* with an enormously distended abdomen, thready pulse, and cold extremities. There is a cause for every case of peritonitis, and if we know what that cause is we should operate to remove it, and if we don't know what the cause is we should operate to find out. As J. W. Ross says, guessing at the cause from without the abdominal wall will not help us. We know that it is an operable disease, that an early operation is of greatest value, while even in advanced cases it will frequently prolong life and possibly cure.

In one of Dr. Gardner's cases the abdomen was opened, inspected through an one and one-half inch incision, but nothing whatever was done; and yet the patient was decidedly improved if not cured by the operation. How can we explain a phenomenon which appears so inexplicable. The life history of bacteria, which is gradually being worked out by the devoted labours of the pathologists, appears to me to throw some light upon the mystery. The lower forms of fungi shun the light and air. Some of them may even be so delicate in this respect that sunlight and ventilation alone suffices to kill them. Not only in tubercular peritonitis, but in other forms of disease with effusion, the simple opening and drainage of the cavity has been noticed over and over again to have a very favourable influence on the disease. Lawson Tait says that he has seen tumours disappear, after laparotomy, in cases of disease of the liver, spleen and head of the pancreas. This has happened so often that it is impossible that it is a mere coincidence. He believes that the mere opening of the peritoneum has a direct influence in setting up the process of absorption. He thinks that some emphatic physiological change is at once set up by opening the peritoneal cavity, because there is a uniform onset of a most distressing thirst which lasts for days, and is not seen so markedly after other surgical operations. "Let the incision in the abdominal wall," he says, "be made down to the peritoneum, but let the serous cavity remain unopened, and this thirst is not marked; but let the peritoneum be opened but a finger's breadth and the result *is* marked." That a therapeutic change is effected in the peritoneum itself by the mere opening of the cavity is now universally recognized in the treatment of what we call tubercular peritonitis by abdominal section. This, however, is a question which I prefer to leave for fuller discussion to our pathologists.

I will now briefly relate my case, for in the words of Crofford, of Memphis, "The honest report of a single case will outweigh all the theory and speculation imaginable."

On the 22nd August, 1892, I was consulted at the Montreal Dispensary for the first time by Mrs. S., aged 32, mother of three children, last child three years old. My clinical assistant, Mr. Harry, obtained the following history. Her family history was good and free from any trace of consumption, as

far as she knew. She had always had fairly good health until two years ago when she was troubled with a soreness in her larynx or windpipe, which also prevented her from swallowing any solids, and for which she consulted Dr. Birkett. He treated her for several weeks with great benefit, since which she remained what she considered well until a few months before coming to the dispensary, when she noticed that she was rapidly getting thin and her complexion was getting very dark, which she attributed to her liver being out of order. Occasionally the abdomen was sore and distended, and coitus and locomotion generally caused her pain. Menstruation had been scanty last two periods and had not come on this time. During the last few weeks she had diarrhœa and frequently felt hot and cold. She had no cough nor soreness of the throat, and her voice was very clear and strong. Her tongue was very coated, and her pulse 120, weak and almost dicrotic.

It is one of the rules at my clinic to take the temperature of every new patient, by which means acute febrile diseases are frequently recognized, which in the hurry of out-patient work might often escape detection. On this being done in this case the thermometer registered 103 under the tongue.

The patient presented a very emaciated appearance. On vaginal examination the cervix uteri was found to be lacerated on the left side and low down in the pelvis, while the left vaginal vault was fuller than normal and somewhat hard.

At the time she looked so like a typhoid case that I ordered her to go home and go to bed, to take a hot water vaginal douche once a day, and to take no other food but milk. On calling at her home next day the temperature was the same. A careful examination of the abdomen revealed the presence of three rose-colored spots which disappeared on pressure. She still had diarrhœa, which was so profuse and painful that I was obliged to give her opium and camphor and even that hardly stopped it. She was troubled with frequent micturition. There was also some abdominal distension, but there was no tumour to be felt, percussion giving, however, only a tympanitic note everywhere, for which I ordered turpentine stupes with considerable benefit. There was no dullness of the lungs on percussion, and auscultation showed that breathing was rather shallow and respiration a little prolonged.

During the next two weeks there was very little change in her condition, and I contented myself with treating the symptoms as they arose. If she had had pain in the right inguinal region instead of on the left I would have had no hesitation in coming to the conclusion that I was dealing with a case of typhoid fever, which at that time was rather prevalent in the city. Her temperature in the morning was nearly always a degree lower than at night.

After about two weeks, on making a morning visit, I found the temperature normal, and the skin which had been hot and dry was now bathed in perspiration. Although weak she felt better in every way and continued to improve for several days, so that I allowed her light farinaceous food in addition to the milk. As her temperature remained normal I yielded to her request that I should allow her to sit up. I did not see her for several days, owing to absence from the city. On my return I found her back in bed with a high temperature and rapid pulse and her abdomen distended and very painful on the left side. She also had a dry cough. She still had diarrhœa, for which I gave her bismuth, pepsine and a little morphine. There was only slight pain but no gurgling on the right side, but on making a little deeper pressure on the left side, I found the abdomen very painful and hard, and on making a bimanual vaginal examination to my surprise I discovered the left vaginal fornix as hard as a board, into which hardness the uterus and left tube and ovary were firmly imbedded.

Notwithstanding the presence of so many of the symptoms of typhoid, I now felt convinced that the case was one of tubercular salpingitis, which indeed it probably had been all along, and I therefore urged immediate operation for its removal. To this, however, the patient would not consent. She was now placed on quinine and codliver oil, alcohol and a generous diet, but her appetite remained poor until the oil was replaced with cream, after which she ate well. As she was under the impression that she would choke if she were to attempt to swallow any solid food, everything was cut very fine and, as far as possible, was first passed through a ricing machine.

Owing to her emaciated condition it was difficult to prevent bed-sores from forming in spite of every precaution. At last

she found herself failing so much that she consented to the operation, which was performed on 24th October at her home, in which I was assisted by Dr. Ritchie and Mr. Smiley. The usual aseptic precautions were taken as far as her condition and the surroundings would permit, and she was easily anæsthetized with the A. C. E. mixture. Her abdominal wall was so thin that I cut through it layer by layer on the director, and it was fortunate that I did so, for the perietes and the omentum and intestines were all so intimately glued together that had I made an artistic single incision I should inevitably have cut through the bowels in several places, as indeed I once saw Olshausen himself do in a similar case. Even with this precaution I had difficulty in deciding when I had reached the peritoneal cavity. There was quite a thick layer of this organized lymph between the parietes and the omentum, but it was separated without much difficulty, when it became evident that the case was not localized in the appendages. In the right inguinal region there was a space the size of the palm of the hand where the omentum was not adherent, and the intestine could be seen to be covered with miliary tubercule. On the left side the omentum was very adherent to the abdominal wall right down to the inguinal region, but it was carefully peeled off until I was able to introduce two fingers down to the left tube as it came off the uterus. On attempting to lift the left appendages out in order to remove them I found that they were in a broken-down and cheesy condition, the tube breaking off about three-quarters of an inch from the cornu. A few handsful of caseous matter were then fished out; but the patient in her exhausted condition was too weak to bear any further prolonged manipulations without great danger, so the abdomen was carefully washed out with several gallons of sterilized hot water, a thin drainage tube was inserted, and the incision was sewed up with silk worm gut. A single hypodermic of morphia was administered, but after that she had little or no pain, not even the pain in the left inguinal region which she had had for some time before. The temperature also came down from 103 to normal and remained there for the two days the tube remained in but gradually rose again after its removal. A few ounces of blood were removed with a sucker during the next forty-eight hours, when

the discharge becoming serous the tube was removed. During the next week she had frequently gushes of clear, water-like lymph from the vagina. She made such a nice recovery after the operation that I began to hope that she might eventually be restored to health, but two weeks and a half later she suddenly had a hemorrhage from the bowels amounting to at least a pint of blood. From that time she rapidly failed, dying a week later and three and a half weeks after the abdominal section. A post-mortem was asked for but refused.

Although the result was ultimately unsuccessful there is a good deal to be learned from the consideration of a case of this kind. First there was the insidious onset of the disease. The patient had been in fairly good health ever since her treatment by Dr. Birkett for some affection of the larynx until a few months before consulting me, and even then she only had the usual symptoms presented in women suffering from lacerated cervix. In fact, had I not taken her temperature I would have had good reason to suppose that that was the cause of her abdominal pain, disturbance of digestion, etc. On the other hand all the symptoms, the temperature included, pointed to typhoid in the second week. There was only one symptom partially missing, and that was the absence of pain and gurgling in the right inguinal region. There *was* pain there, but not so marked as on the left side. Then again, after a period of defervescence during which the temperature remained several days normal and even below normal, the temperature arose as in a typhoid relapse, while the profuse hemorrhage from the bowels coming on three weeks later would have rendered this opinion more probable, had I not had the diagnosis of tubercular peritonitis made positive by the abdominal exploratory incision. Judging from the thickness and toughness of the adhesions the disease must have been progressing for many months while the patient was going around and doing her work. Then again, this point emphasizes the value of an exploratory incision as an aid to diagnosis in doubtful cases. Many cases of tubercular peritonitis are diagnosed and treated as typhoid. I regret very much that a large piece of caseous material which represented the left tube and which I laid aside for microscopical section and examination for tubercle bacilli was thrown away by the

nurse. However, that might have been negative in its result, for it does not always follow that the bacilli will be found. In fact, it is the exception to find them in undoubted cases of tubercular salpingitis. They are probably destroyed by the phagocytes, leaving nothing but the caseous debris of dead cells and bacilli. Another interesting question is this: Did the disease originate, or to be more definite, was the infection introduced by the *genital* tract and carried up the vagina, uterus and tube to the peritoneum? or were the bacilli introduced from the *digestive* tract into the peritoneum and thence into the tube? Numerous cases of both these methods of infection have been recorded. Some maintain even that the spermatoza from a tubercular husband may contain the bacilli, but the husband in this case was very healthy, and it seems unnecessary to fall back upon this hypothesis when there are so many easier ways for a woman to become infected. This may occur either with tuberculous sputa from her own or her husband's or her neighbours' lungs by means of her, his or their fingers or soiled handkerchiefs. In view of the fact that so many are so biassed by the doctrine of the heredity of consumption that they cannot recognize its terrible infectiousness, it is rare that precautions against infection are taken. There are but few out of the thousands of tuberculous husbands, I fancy, who take the precaution of disinfecting their hands and penis before having sexual intercourse. According to Winkle 50 per cent. of the cases of tubercular peritonitis are infected by a tubercular salpingitis and the early removal of the diseased tube would have prevented it. The rest of the cases of tubercular peritonitis are infected by means of the digestive tract, the tubercle bacilli passing directly from the stomach and intestine into the peritoneal cavity. The bacilli may have been swallowed with infected meat or milk, which is probably the commonest method of all when the lungs are not affected, but more often still when the respiratory tract is primarily attacked the bacilli are swallowed with the sputum in large numbers. This was undoubtedly the source of infection in my case. Dr. Birkett probably treated her for tubercular laryngitis and cured her, but the cicatrix led to some distortion of the epiglottis which caused her difficulty in swallowing. At the time she swallowed enough bacilli to infect the

peritoneum and the disease slowly progressed ever since without the symptoms being at any time sufficiently marked to call urgent attention to them.

Whence came the hemorrhage from the bowels? Doubtless from the ulceration of a tubercular focus eating through a large vein or artery in the wall of the intestine just as the same thing happens in tubercular disease of the lungs, and just as occurs in the ulceration of Peyer's patches in typhoid fever. That perforation of the bowels was *not* followed by fæcal extravasation, as generally happens in the perforation of typhoid, can be easily explained by the presence of a vast amount of dense adhesions in tubercular disease contrary to what is the case in typhoid, by which means the area about to be perforated by the tubercular ulceration is walled off from the rest of the peritoneal cavity.

If my brief resume of our present knowledge of tubercular peritonitis should draw forth some remarks from those here who are more able to instruct you than I, and if the report of my case will lead you all to come to a more speedy diagnosis and to adopt earlier what I believe is the only proper treatment, my very imperfect paper will have fulfilled the purpose for which it was so hastily written.

Dr. Adami held that in this case probably all would agree that infection had occurred through the intestinal tract—the most usual cause of tubercular peritonitis. While infection could, and did, without doubt, originate through the genital passages in the female, he feared that obstetricians were wont to attach too much importance to this channel. Tubercular peritonitis is most frequent in children, and here there can scarce be a question of infection per vaginam.

With regard to operative treatment as a means of diagnosis he agreed with Lawson Tait, "When in doubt perform a laparotomy." It must, however, be remembered that in a very large proportion of cases, tubercular peritonitis tends to be very chronic, nay more, not unfrequently it tends to spontaneous cure or, rather, arrest. The explanation of its frequent slow course, especially in children, is to be found in its connection with the milk diet of those affected. As Bollinger, Bang, Woodhead and others have proved, there is an intimate association between tuberculosis in the cow and the tubercular peritonitis in children.

Dr. Adami dwelt to some length upon the nature of this tubercular disease in the cow, and pointed out the frequent difficulty in diagnosing the same. He indicated that by centrifugalising the milk the bacilli could be determined with comparative ease, while diagnosis might be aided by the employment of Koch's tuberculin. It has of late been fairly satisfactorily proved that tubercle bacilli from different animals possess different degrees of virulence; there are, in fact, varieties of the bacillus in question, and cultures obtained from the cow are of less virulence than those obtained from cases of acute tuberculosis in man. In this way, he considered, might be explained the milder nature of many cases of tubercular peritonitis, especially in children. It is not uncommon, in conducting autopsies upon children of twelve years of age and over, to find that the peritoneal cavities are perfectly sound, yet certain of the mesenteric glands are cheesy, indicating a condition of tuberculosis that has passed off, leaving but these traces.

With regard to Dr. Smith's explanation of the fact that opening the abdominal cavity may lead to cure, Dr. Adami could not agree with him that simple ventilation of the cavity was the cause. He was of opinion that a far more likely cause was to be found in the irritation induced by the operation, and washing out—the inflammation set up in excess of what obtained previously. With this might be compared the increased inflammation and increased absorption that accompanied the injection of tuberculin, etc.

Dr. Reed expressed his pleasure at listening to Dr. Adami's remarks He noticed that in the *British Medical Journal*, of this week, one or two points mentioned were in a line with the opinions of Doctors Smith and Adami. Several eminent men, Robson and others, said cases with a good deal of dropsy were most likely to do well, and that those cases which were most likely to do well after laparotomy were most likely to do well without it. Supposing, of course, that a patient has tuberculosis of the larynx, it is more than simple peritoneal tuberculosis, and the prognosis would be worse.

Dr. Stewart: I would like to ask if there was any record of the length of time which elapsed after operation, before these cases were reported. The majority of those cases were

given as cured, but the date of the report after operation is not given. Surgeons are apt to report cases too quickly after operation; the results are called cures; but six months or three years afterwards they would not be cures.

Dr. Smith: Twenty-three out of ninety were well twelve months afterwards; twenty-seven were well six months afterwards. The time was not given for the whole number, but one reporter states as above. Dr. Gardner's cases were reported here three years ago, and two out of the five were well one year afterwards.

I have listened with a great deal of profit and pleasure to Dr. Adami, but there are still a few things I would like to ask him. During the discussion on Dr. Gardner's cases, the general opinion was, that the cheesy material in the tubes was the cause; they were the nidus. At the time, I thought the cheesy material was the result of the bacilli. Was I correct in supposing the cheesy deposits in the tubes the result of the destruction of tissue by bacilli?

I can appreciate the statement that irritation of the peritoneum, and increased supply of blood, may serve to carry off some of this inflammatory deposit; it seems both plausible and reasonable. Leucomatous deposits on the cornea are thus cured by the irritation of calomel powder. But as to washing out the abdomen accounting for the irritation in every case, in one of my cases there was no water put in, and yet the case was well one year afterwards.

Dr. Adami's statement concerning the difference in virulence of the bacilli in cattle explains very well indeed what I could not understand before—how tuberculosis of the peritoneum was so much slower in its progress than tuberculosis acquired otherwise. One more question: When one examines the miliary tubercles in the peritoneum, are the bacilli found there? or, are they destroyed by phagocytes? or, is the little tubercle composed of fibrous tissue without cells? and, in cases of cure, how does the peritoneum be after the cure? are the adhesions still devoid of a history? have the bacilli a certain life history? do they die of old age? or are they killed by phagocytes?

Dr. Adami pointed out the absence of any certain demonstration that the tubercle bacilli form spores. There can,

however, be little or no doubt that these microbes have a resistant form very tenacious of life. Old tubercular foci may be examined with the greatest care, and no bacilli be discovered, but the same material injected into the guinea pig will cause definite and generalised tubercular lesions. As to the action of phagocytes upon tubercle bacilli, much depends upon the virulence of the latter. Often the bacilli can be seen within the giant cells, presenting changes in appearance which are only explicable on the assumption that they are being destroyed; but along with these one sees others that stain well and show no departure from the normal. These we may look upon as being alive and active—although this need not necessarily be the case, for, as Prudden has demonstrated, recently killed bacilli may take up the stain with readiness.

Stated Meeting, January 20th, 1893.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

Band of Adhesion between the Cervix Uteri and the Vagina.—Dr. J. A. SPRINGLE read the report of a case as follows:—

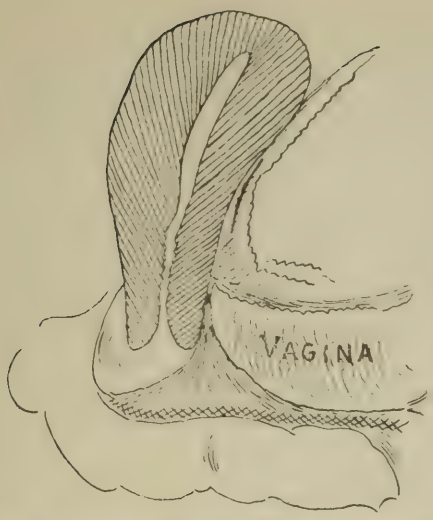
Mrs. M., aged 27, Irish, had always enjoyed fair health to date of marriage, four years ago. She was delivered of a large child after a long, tedious labour, with instrumental aid.

Since that time she has aborted twice at the third month, suffering greatly before each mishap with pelvic distress and pain. In the intervals she did not complain either of pain or disordered menstruation.

In December, 1891, I attended her for her third abortion, which was complete when first seen. On vaginal examination, the following peculiar condition was found to exist:—

The posterior vaginal wall was raised, by a tough fibrous cord, in a tent-like manner to the anterior lip of the cervix in front of the os, leaving an aperture on either side, through which the finger could explore the parts beyond. The adhesion measured about one-eighth inch in diameter at its attachment to the cervix. At the time, the uterus appeared to be held down by this band.

The patient made a good recovery, and the adhesion was subsequently divided. Adhesion in this case probably was the result of her first confinement.



Whether the condition was responsible for the repeated abortions, I am unable to say positively, as she has not become pregnant since.

Dr. Smith has had many cases, in the Montreal Dispensary, of women between 40 and 60 years of age suffering from cicatricial bands between the cervix and the vagina. Such adhesions are not seen so frequently in younger women, more gentleness being now employed in obstetric practice than formerly; or, perhaps, it may be that in the old days the head was left much longer pressing on the cervix and vagina, causing destruction of tissue. Pozzi in his new work on Gynæcology devotes several pages to these bands. They may interfere with labour so much in some cases, that it is considered necessary to induce premature delivery.

Anomalous Cases of Diphtheria.—Dr. H. S. Birkett read the following paper on this subject, and Dr. Johnston related the results of the bacteriological examination:—

Clinical Histories—By Dr. Birkett.

Case I.—K. E., aged 7. This little girl I was asked to see in consultation with the late Dr. Ross, in reference to a discharge from the right nostril. She was just recovering from a sharp attack of measles and was considered to be progressing favourably until the day before the consultation, when it was

noticed that there was a thin, ichorous discharge from the right nostril, and during the day the voice became a little husky. The following morning when seen, the child was found sitting up in bed and enjoying herself with her toys, and apparently very well. Upon examination of the nose, just making its appearance within the right naris, was seen a thin membrane, quite white in colour, rather leathery in consistence, readily raised from the mucous membrane covering the septum, leaving its surface studded with several bleeding points and only in contact with the mucous membrane of the opposing inferior turbinated bone by reason of the swollen condition of the mucous membrane itself—these two conditions being sufficient to occlude that naris—the skin of the upper lip was somewhat reddened, excoriated and moist from the moderate acrid discharge coming from the affected nostril. The left nostril, after the application of a 5 per cent. spray of cocaine, was seen, by a careful examination, to be entirely free of anything like membrane and quite patent to respiration. The child was extremely tractable and permitted a perfect laryngoscopic examination to be made, revealing the presence of a very delicate, transparent membrane, situated upon the laryngeal surface of the epiglottis and extending directly downwards, not laterally, to and upon both vocal cords ; the membrane was so delicate as to allow of the underlying hyperæmic mucous membrane being distinctly visible. The voice was only rough in tone. The following morning there was a slight, watery discharge from the left nostril, but no membrane was to be seen upon careful examination until the next day, when a membrane similar in character and situation to that which occupied the right nostril two days previously, was plainly visible, and as on the first visit a small portion of it was removed and sent to Dr. Johnston for examination. Twenty-four hours later, curiously enough, this nostril which had contained membrane, now only had a moderately thick, yellowish secretion, which was easily removed by means of an alkaline spray. The membrane in the left nostril was seen to have receded almost to the posterior third of the inferior meatus on the first day. Careful rhinoscopic examina-

tion, which the child readily permitted, revealed no membrane in the naso-pharynx, and inspection of the tonsils, fauces and pharynx, showed these parts to present nothing more than a hyperæmic condition of the mucous membrane. Five days from the onset of the trouble the mucous membrane of the nose and larynx was perfectly free from false membrane, the secretion from the nostrils being thick, yellowish coloured mucus.

The respiration, which at first was buccal, had now become nasal, and the voice increased in tone and clearness. The child's general condition was remarkable. She sat up in bed the greater part of the day and amused herself with her playthings. The pulse never reached 100, and the temperature never rose above 98.5. There was no loss of knee jerk and the urine was entirely free of albumen throughout the whole course of her illness.

Case II.—The second case concerns a boy of eight years old, whom I was asked to see by Dr. J. A. Macdonald. The features of this case differ from the foregoing only in one or two points: (1) The membrane made its appearance in the left nostril first. (2) The underlying mucous membrane did not bleed upon the removal of the false superimposed membrane. (3) Tended to recur after removal.

The general condition of the child's health did not seem to be effected by the existing trouble. There was no loss of knee jerk; no albumen in urine; no elevation of either pulse or temperature. There was no existing membrane in the naso- or buccal-pharynx. A striking feature was the absence of any glandular enlargement in both cases. Dr. Johnston reported Lœffler bacillus in both cases.

The chief interest in these cases is, I understand, in the bacteriological investigation, for cases of nasal diphtheria are frequently seen by us all, but the absence of all the classical symptoms may perhaps interest some. Here we found two children suffering from a dread disease which usually produces rather profound symptoms, and the fact that the characteristics of the membrane were wanting, no fetor present, no enlarged glands, no alteration in the pulse nor elevation of temperature,

no nervous phenomena either attending or following the course of the disease, no reaction upon the general health of the children, made one hesitate about pronouncing them to be true diphtheria, but the presence of the Klebs-Lœffler bacillus in the one case, and of the development of an undoubted faucial diphtheria in another member of the second family, decided that we had to deal with a true specific disease. The first case, however, for the first forty-eight hours presented a difficulty in diagnosis between diphtheria and a disease only of late fully recognized, namely, fibrinous rhinitis, from the fact that this case, in its clinical aspect, corresponded to such a condition, and, moreover, it followed upon an infectious fever, namely, measles, in which, in the majority of reported cases of fibrinous rhinitis, it is especially found to follow, and only the demonstration of the existence of the Klebs-Lœffler bacillus enabled us to make a positive diagnosis.

Bacteriological Examination of the Membrane—
By Dr. Johnston.

In Case II the membrane, microscopically, showed fibrillar structure, but did not give the staining reaction of fibrin. By Weigert's stain, fibrin can be readily distinguished under the microscope. The fibrin filiments come out bright blue, and many bacteria, notably the diphtheritic bacillus, are also stained. In the present case the number of bacteria was very small, and the results were atypical.

Cultures from the exudation had an appearance not quite the same as that of the diphtheria bacilli, being coarser and somewhat yellowish. Microscopically, the bacilli in the cultures had exactly the appearance of the diphtheritic bacilli. I inoculated the conjunctivæ of two rabbits, having first wounded the membrane by scratching, but did not succeed in producing any diphtheritic exudation. On account of these negative results I thought it was not a case of diphtheria. I preserved the cultures, however, and some months afterwards, in working over some old cultures, I experimented with these and found they possessed the property of growing on serum in twenty-four hours, and, invisibly, on potatoes. This made me

think they might after all be the true diphtheria bacilli. I injected some of the cultures subcutaneously into a guinea pig, and found it killed in a typical manner, so that after all we had to deal with true diphtheria. The rabbit is a more refractory animal than the guinea pig towards diphtherial virus, and I had at first probably a mixed culture, which afterwards became purified on being passed through serum. Thus we had a curious exudation which had not the ordinary characteristics of the diphtheritic exudation, either to the naked eye or to the microscope, where the patient was apparently not at all sick, and yet where we got finally positive proof that we had the genuine Lœffler bacillus to deal with.

In Case I, I received a small piece of the dried membrane about the size of a pin-head. I moistened this and made cultures in the usual way, and obtained a very abundant growth of colonies with all the general appearances of the diphteria bacillus. To test their nature I inoculated a guinea pig in the usual manner, and the animal died within forty-eight hours with the typical infection. Here there is no doubt we had a case of anomalous exudation caused by the diphtheria bacillus.

In neither of these cases were there any diphtheritic paralysis. The children recovered perfectly.

Important studies on the ætiology of fibrinous rhinitis have appeared, one by Koplik, in the *New York Medical Journal*, August 27, 1892, and the other by Park, in the *New York Medical Record*, 1892. Both observers met with cases in which there was a membranous inflammation of the throat of an anomalous character; they varied greatly in severity, sometimes forming a mere film of exudation and at other times forming a thick fibrinous layer. Altogether ten such cases were observed where the diphtheria bacillus was found. They even found the diptheria bacillus in cases which presented no membrane at all—in cases of catarrhal sore throat, and in cases of what was apparently follicular tonsillitis. A. C. Abbott (*Medical News*, May 13th, 1893) has also described three mild cases of fibrinous rhinitis where the Lœffler bacilli were found. We, therefore, have certain anomalous inflammations

of the mucous membrane of the throat and nose, which do not anatomically or clinically present the picture of diphtheria, but in which the diphtheria bacillus is present, and there is very little doubt that it is the causative agent of the condition.

There are some points that are interesting in connection with these cases. Why does diphtheritic inflammation sometimes run such an anomalous course? Is there any connection between the anomalous anatomical condition and the absence of fever, swelling of the glands, albumen in the urine, subsequent paralysis typical of the effects of the diphtheritic poison? We are only beginning to learn how this poison works. The anomalous condition was apparently not due to any weakness in the virus, but to some power which the patient has of resisting its action—a condition of partial immunity. It would be interesting in such cases to find experimentally whether the serum of such individuals possessed undue resisting powers to the bacilli compared with the serum of other people. An artificial immunity against diphtheria may be induced by inoculation with modified virus, or the injection of small quantities of poison into animals, and the serum of such animals inoculated into others gives protection. Whether there is another specific disease condition, fibrinous or pultaceous rhinitis (which latter is the French term applied to this anomalous condition), is a matter which is not yet clear. A number of cases have been now examined, and Abel claims that fibrinous rhinitis may be set up by the pneumococcus (the specific agent in pneumonia).—*Centralblatt Bakt.*, Dec. 28, 1892. It may be mentioned that the first of our cases (Case II) was recorded in the Montreal Medical Journal, September, 1891.

Discussion.

Dr. Proudfoot said that he has often had cases where it was difficult to decide whether or not the disease was diphtheria. He had a case in his practice very similar to Dr. Birkett's. A boy ten years of age was treated for a purulent inflammation of the ear following measles; a membrane formed in the nose and was removed, but was not followed by any other. It only occurred on one side. The child did not complain of any

unusual symptoms, except the general malaise following measles, from which he was recovering very well.

Dr. McConnell said that these cases form another instance illustrating the great advantage of the bacteriological methods of diagnosis. He urged the surgeons to bear in mind the utility of serum, and to save it for bacteriological investigation. In many cases we have no other means of diagnosis. In the present cases he thought that if Dr. Birkett had seen them a little earlier he might have observed some slight elevation of temperature. He had seen such cases—little fever the first day, and the next day the fever is completely down. It seems rather odd to have the diphtheria bacilli growing, without at least producing some poison.

Dr. Major thought that anomaly was the rule in diphtheria; at all events, you cannot lay down any hard and fast rules as to its course, local and constitutional. Secondary nasal diphtheria is one of the most fatal forms; primary nasal diphtheria, on the other hand, is not only mildly contagious, but the septic influence is almost altogether wanting. When primary it confines itself principally to the nasal passages, seldom extending into the naso-pharynx, still more rarely into the larynx, and glandular enlargement is the exception. In most cases the membrane is confined to one side of the nose exclusively, reforming as fast as it could be developed after removal, the health of the parts influencing its renewal. He cited the case of a child from whom he had previously removed a tonsil, the cicatrical tissue was free from exudation, while every place around it was covered. It would seem that the degree, or an excess, of the blood supply in the part largely regulated the region where the membrane may develop, and also the development of the disease in the individual. In regard to the Klebs-Löffler bacillus, the clinicians should not throw themselves into the arms of the bacteriologists. Who is going to correct the bacteriologists, for all know how liable they are to be mistaken at times? He thought that it would be a great mistake to neglect good classical symptoms in favour of any theory that might be arrived at by a bacteriological examination.

Dr. Foley asked whether erythematous rashes were common in diphtheria. He had heard of such a case the other

day, where a profuse desquamation of the neck followed diphtheria.

Dr Mills thought that the most important conclusion from Dr. Johnson's researches is to confirm the views held as to the infection of diphtheria. The poison apparently must have been formed but not absorbed. It seems that the difference in the resisting powers of certain individuals to infectious disease does not lie altogether in the serum. Pathologists will have to abandon the narrow ground of the serum alone and take in the tissue fluids in general. The life of the cell is expressed in its fluids. That is what I think this immunity question is going to work out to, to a certainty. The question of absorption is very interesting. The scars referred to are especially interesting. I think the disease did not attack these parts, not on account of their lack of vascularity, but on account of their deficient absorptive power.

Dr. DeCow did not think minutiæ in diagnosis of much importance to the general practitioner, the important thing being to adopt isolation and get at your treatment at once.

Dr. Birkett, in answer to Dr. Foley, said that the occurrence of rashes in diphtheria, especially in the more malignant forms, is well recognised. In both of these cases the membrane was not limited to one nostril, it invaded both nostrils. They differed in this, that in one case the membrane recurred on removal, in the other it did not. In regard to the remark of Dr. DeCow, he said that these cases were treated as diphtheria before the report of the bacteriologist had been received.

Dr. Major referred to a case reported by him some four years ago. He at first regarded it as a chronic membranous nasal catarrh. The young lady suffered from complete obstruction of both sides of the nose, but rhinoscopic examination showed that it did not at all enter into the posterior nares; there was no constitutional disturbance, no enlargement of glands; she had not been exposed to contagion so far as known, no case being in the neighbourhood. She was living at the time in the Young Womens' Christian Association, where there were twenty or thirty other people in the house. At that time the knowledge of the condition was very vague and the examination did not yield any result. It was treated

as a membranous nasal catarrh, and after trying various measures he found that the galvanic cautery was the only means that yielded any ready result. The treatment was carried out persistently daily for probably a couple of months. The case was reported to the Society, and before the paper was read a young lady occupying the same room as this patient was ill, had been attended and prescribed for as a case of tonsillitis. In consultation he afterwards recognised it as a case of diphtheria, a bad form, with nasal and pharyngeal extension. Since then he has had no doubt in his mind that the case of chronic nasal catarrh was nothing more nor less than a case of chronic diphtheria, and that the second case was contracted from it. With regard to the erythema that a gentleman spoke of a moment ago, cases of that kind are sometimes apt to be confounded with scarlatina. He had had a case some time ago which he pronounced diphtheria after an inspection of the throat. A few days afterwards a scarlet rash developed, but two weeks later, general paralysis setting in, confirmed the diagnosis.

Report on Three Prostatic Tumours—Dr. ARMSTRONG exhibited three specimens of hypertrophied prostate which he had removed last summer, and read Dr. Adami's report on the microscopical examination, as follows.—

These three tumours were sent to the Pathological Laboratory in bottles labelled respectively : 1. W. R., age 72 ; removed August 4th, 1892. 2. J. H , age 67 ; removed August 2nd, 1892. 3. — S. ; removed September.

All the three are firm, nodular and lobulated masses, which on cutting present a fibrous, fasciculated appearance, with here and there minute cyst like cavities in the fibroid material. No. 2 is the smallest, and forms but a single encapsuled mass, 3 cc. by 2.3 in its greatest diameters. No. 1 is the largest, and is composed of three separated lobules, the largest 6 ccm. by 3.5 ccm., and very irregular in shape, the other two each 3.5 by 2.5 ccm. No. 3 is also multiple, and of fair size, there being three large and one small lobules, joined together at one point by dense capsular fibrous tissue ; the largest of these bodies is an oval mass, 5 cc. by 4 by 2.5 cc. On section, slight differ-

ences are to be made out macroscopically. No. 1 is densest in structure, most fibrous, and shows the least amount of cavitations. No. 2 is very dense, but presents small cysts filled with greyish granular material. No. 3 is softer, and shows numerous comparatively large cysts containing fluid.

All three tumours are practically identical in structure. All present. in certain regions, typical acini of the prostatic gland substance cut across, showing the large columnar epithelial cells resting upon a nucleated layer of smaller cells with basement membrane; while the lumen of many of the glands contains a granular substance, probably portion of the albuminous and mucinous secretion precipitated by alcohol, together with a certain amount of cell *debris*. In other regions the acini are somewhat dilated and cystic, and here the epithelium is more cubical, while the small papillary outgrowths of the epithelium are not so well marked. But around the acini there is in all cases a very definite increase in the muscular or fibro-muscular stroma. All three specimens present in parts evidence of a fibroid degeneration of this muscular stroma, the plain, spindle-shaped, non striated muscle fibres becoming separated and atrophied, and replaced by clearer, more translucent connective tissue. This condition is most advanced in Specimen 1 (the smallest and firmest of the tumours), although even in this it is not very pronounced, and there is no very great thickening of the fibrous coat of the arteries in the affected regions, such as is seen in advanced fibroid prostate. We have thus, in all three cases to deal with a true hypertrophy of prostatic tissue, a hypertrophy affecting all the elements of the gland. The condition may be spoken of as a partial or localized hypertrophy of the prostate.

It is questionable whether such growths as these should be described as tumours, save in the most general sense of the term, for here we are dealing with neither a neoplastic nor truly a metaplastic growth. The specimens are not true myomata, such as occasionally are found in connection with the prostate, and to describe them as myoadenomata tends to veil the fact that they are nothing more nor less than hyperplastic prostatic tissue.

I am of opinion that the explanation of such localized overgrowths of the prostate is to be found primarily in the fact that the gland originates as a series of acini, each of which is surrounded by a coat of plain muscular tissue, while at a later date groups of these acini become surrounded by a common sheath of muscular or fibro-muscular tissue.

[As my friend W. Griffiths points out (*Jour. of Anat. and Phys.*, Vol. xxiv., 1890), the explanation of this peculiarly rich muscular coating is to be made out from the mode of action of the gland. The epithelial cells pour their alkaline and albuminous secretion into the relatively large lumen of the acini, and here, in the absence of any special reservoir, it is stored up. Immediately antecedent to the emission of the semen, this prostatic secretion has to be suddenly poured out into the urethra. This act is brought about by the strong contraction of the muscular covering of the individual acini, whereby the prostatic secretion is ejected.]

Thus the prostate is composed of numerous groups of highly specialized and partly independent acini, and this very mode of structure leads to the possibility of localized overgrowth of portions of the gland. In this connection it is interesting to study all these three specimens (but more especially Nos. 1 and 3), and to note how the tumours are made up of individual lobules well marked off, and in some instances easily separable from the neighbouring lobules, and these present frequently differences in the relative amount of glandular and muscular substance, and the condition of the same.

It would be interesting to determine whether these localized overgrowths are truly cut off and capsulated in lots, so that the secretion has no means of outlet into the urethra. This, so far, I have been unable to determine. The condition of the epithelium of the greater portion of the tumours—its typical columnar nature—is against complete encapsulement, for remembering how chronic are such growths, were the ducts obliterated we should expect to find the epithelium atrophied by pressure and reduced to a cubical or flattened condition, as indeed is the

case in the cystic areas. In these latter alone can one suppose that there has been obliteration of the ducts ; but, as I have said, these latter form but a relatively small portion of the masses.

The importance of this fact lies in its bearing upon the nomenclature of the condition. For only if in these bodies we are dealing with independent masses of gland tissue, devoid of natural outlet for their secretion, can we rightly, I hold, speak of them as being adenomata ? Otherwise we must regard them, as I have throughout this report, as examples of localized hypertrophy.

Dr. Armstrong continuing said that clinically these cases are very interesting. They occur as a group of cases for which at present the relief is not very satisfactory. From an operative point of view they are bad patients. They often come to us in such a condition of toxæmia, with advanced kidney disease and dilated genito-urinary tracts, that they are not able to resist the shock or hemorrhage. In the future it is believed that much better results will be obtained than at present.

Dr. Johnson wanted to know what was the rational explanation as to why the prostate enlarges. There is no special irritation, no apparent local causes, and what is remarkable it enlarges at a time when it is least used. We have all heard of atrophy from disuse, but hypertrophy from disuse seems to be implied in the case of enlarged prostate.

Dr. Smith always takes an interest in the prostate gland, because he constantly thinks of the resemblance between it and the uterus. The structure of both organs is composed mainly of fibrous and muscular tisssue. The uterus also contracts under the same conditions which cause contractions of the prostate. It seemed to him that from Prof. Adami's description of the gland one can easily see why people get enlargement of the prostate, and even why they get it when they don't want it any more. Overuse of this muscular and fibrous tissue will cause hypertrophy. Every time the fibres of the prostate contract they increase in size, and when this has been going on for twenty or thirty years, they get to be a pretty good size. Fibrous tissue frequently occurs in the

uterus as the result of an exudation from the walls of the uterine veins, due to some obstruction to the venous circulation in some of the large veins about the brim of the pelvis, and into which the uterine veins empty. When we have chronic constipation, with a loaded sigmoid flexure pressing directly on the common iliac veins as they pass over the brim of the pelvis, we have engorgement of all the subsidiary veins, an exudation of lymph, and the organization of the lymph into fibrous tissue. Obstruction to the venous circulation is the key-note to the causation of enlarged prostate; this obstruction may be due to chronic constipation, to the heart, or to the liver. For the last few years he has employed the fluid extract of ergot in the treatment of enlarged prostate, for the very reason that he has seen such good effects from this drug in the treatment of subinvolution, and he found it generally gave great relief. In one case a soft bougie could not be passed; after a few doses of this remedy the man could pass a good stream. In the stage when the enlargement is forming we are to keep the following points in view: Don't excite the gland too often; remove any obstruction to the venous circulation, and give ergot to cause the already hypertrophied muscle to contract.

Dr. McGannon believed that enlarged prostate is more often due to overloaded blood vessels than to overuse, and thought that such cases can be much benefited by proper treatment, even when the genito-urinary tract is involved.

Dr. Mills would not say anything on the subject but for the alarming views of Dr. Smith. He called attention to a kindred phenomena which may throw some light upon the subject. Bitches as they grow old are very liable to develop adenomatous tumours in the region of the mammary glands. Dr. Lafleur examined some of these and pronounced them adenomata, tending to be malignant. Dr. Adami is of the same opinion. Here, then, you have an overgrowth of the same kind of tissue with a tendency to become pathological, even malignant: both connected with the period of life when vitality is lowered. He was not prepared to pronounce a definite opinion, but he most emphatically repudiated Dr. Smith's ideas on the subject of the etiology of hypertrophied prostate.

The late Dr. R. Hugh Berwick—Dr. Mills said: "I have a motion to make, and with the rest of you I regret that we have so often to make these motions. In the last few years they have come with painful frequency. I will therefore move, and Dr. Proudfoot will second, the following resolutions:

"*Resolved*—That this Society has heard with deep regret of the death of one of its members, Dr. Robert Hugh Berwick, who, though a young member of the profession, was one of the most promising, and one who had gained the respect of all with whom he had come in contact during his brief but successful career.

"*Resolved*—That a copy of this resolution be sent to the friends of the deceased, to the Dental Association of the Province of Quebec, and to the Press."

Stated Meeting, February 3rd, 1893.

James Stewart, M.D., President, in the Chair.

A. W. Haldimand, M. D., was elected a member.

Malignant Growth of Prostate and Base of Bladder.—Dr. Adami brought this case before the Society on account of the numerous points of interest that it presented, more especially on account of the long continued history of kidney and bladder disturbance, and the nature of this disturbance. Dr. Bell, in whose ward the patient was at the time of death, would furnish details of the history of the case. He would simply remark that the patient, T. R., aged 88 years, entered the General Hospital in June, 1892, complaining of renal symptoms, and was in consequence placed under the late Dr. Ross. Soon vesical disturbance became more prominent and he was transferred to the surgical wards. Here malignant tumour of the bladder was diagnosed: there was progressive emaciation ending in death upon January 20th, 1893.

Dr. Adami detailed the post mortem appearances. Leaving aside the condition of the urinary system, there were briefly senile degeneration of the various organs, hydrothorax and odema of the lungs. He exhibited the kidneys which were

large. The left kidney weighed 180 grms., and presented an obstructive cyst occupying the lower extremity of the organ. On section both cortex and medulla were found to be narrowed and of pale colour. The right kidney was larger and more hydronephrotic, but was not weighed or cut into, since it was reserved attached to the ureter and bladder for museum purposes. The pelves were greatly distended, as were also the ureters along their entire course until the base of the bladder was reached, where they entered into a mass of new growth. The bladder was distended, its apex reaching to the level of a line joining the anterior superior iliac spines. It contained more than 350 c. c. of bloody urine, together with masses of blood clot. On the other hand, the pelves of the kidneys and the ureters were filled with clear, almost colourless urine. Upon emptying the bladder the source of the hemorrhage was made evident. From the base there projected into the cavity a large nodulated and very vascular growth, divisible into three irregular masses, of which the most prominent was in the median area and somewhat anterior. The organ was firmly impacted into the pelvis, the new growth implicating also the prostate and the tissues around the base of the bladder. The glands of the left inguinal region were enlarged and the seat of a growth which felt firm on section. Similar secondary growths affected the retroperitoneal glands, and along the course of the right common iliac artery, near to its origin from the aorta, were two enlarged glands of the same nature.

Microscopical examination of this new growth yielded results of not a little interest. Portions removed from the masses projecting into the bladder presented an appearance which could not be distinguished from what is usually recognised as a form of alveolar sarcoma; that is to say, that with the low power nothing could be seen but a collection of round or slight oval cells of fair size, and towards the surface of the growth these could be seen to be infiltrating the muscle fibres of the bladder wall, or what remained of them. With a higher power these cells could be seen to possess an alveolar arrangement. A peculiarly delicate stroma surrounded masses of these cells, forming a series of rounded

alveoli, and in this surrounding stroma ran fine vessels of an embryonic type. Where the tissue of the sections had not been loosened in the process of preparation this arrangement was in parts unrecognisable—the growth was undistinguishable from a true sarcoma.

A study of the prostatic portion of the growth and of intermediate areas revealed the true nature of the growth. In the anterior region of the prostate there was still present remains of the prostatic tissue. The tubules and their surrounding tissues could be seen presenting a typical arrangement, but with this some dilatation of the lumina and hypertrophy of the stroma. Sections which showed these showed, however, other gland follicles which were becoming enlarged, and the epithelium here was undergoing proliferation, so as completely to occlude the lumen. The next stage to be made out consisted of what seemed to be these modified masses of glandular epithelium giving off finger-like collections of cells extending into the spaces of the surrounding tissue, and a little further back the condition of the modified prostate was that of a typical scirrhous cancer. Passing now towards the base of the bladder the cell masses become larger, the individual cells less compressed, the intervening fibrous stroma more and more sca. ty, and thus the passage could be made out from the scirrhous condition through that of medullary cancer to the first described condition which, as has been stated, would undoubtedly, without further study, be taken by most observers for an excellent example of one form of alveolar sarcoma. The alveolar sarcomata form so unsatisfactory a group of neoplasms, the descriptions of the various forms given by different writers are so divergent that it is worth while to record this case, showing as it does the necessity of a careful study of all portions of a growth presenting the appearance of what might reasonably be considered the true alveolar sarcoma of some authorities.

This difference in the appearance of the various parts of the tumour harmonises well with the clinical history of the case. Evidently the disease started in the prostate, and here it had been of very slow growth. The firm fibrous nature of the neoplasm points to this, and it is of special interest to note

that, according to the patient's statement, the enlarged glands in the left inguinal region had been present and noticed by him for quite two years. There was a history of prostatic disturbance for some considerable period anterior to this, and the interesting question is raised as to whether the carcinomatous condition had been preceded by hypertrophy of the organ. This question, it is true, cannot be answered with certainty. It might be considered that the enlargement of the follicles in the anterior region of the organ that had not as yet undergone atypical epithelial proliferation, and the increase of stroma here is an indication that this had been the case; but the point will not bear having any great stress laid upon it. Evidently also, from its appearance, the vesical portion of the growth was of rapid development, the marked want of fibrous inter-alveolar substance points to this, and here again we have the history of relatively recent vesical symptoms. It would seem as though the neoplasm had extended under the base of the bladder (externally), and so brought about obstruction of the ureters before the wall of the viscus itself had been invaded. The firmer nature of the growth in the former region is in support of this opinion.

The fact that the inguinal glands of the left side were implicated is worthy of note, not only, as has been stated, because of the early period at which they were affected, but also because their implication would seem to indicate a back flow of lymph. This, however, is in consonance with numerous other observations tending to show that lymph may flow in either direction, or to place the matter otherwise, that when one channel becomes obstructed a collateral if round-about channel is employed.

Dr. Bell had little to add to the clinical history of the case given by Dr. Adami. There could in this case be little difficulty of diagnosis when he saw the patient. From the extensive nature of the disease in the bladder, from the secondary deposits in the glands, from the man's advanced age and approaching death from senility, this was not at all a case for operation, and having satisfied his mind upon that point he simply waited, knowing that it would not be long before the specimens would be passing through Dr. Adami's hands.

With regard to the history of the progress of the disease, having only once investigated the case he could not be very clear, but this he could affirm, that the patient had manifested symptoms referable to the prostate for five years, but had only been seriously ill for a twelve-month. The growth in the groin had been present for two years.

Dr. Smith was under the impression that the lymph always flowed from the urethra towards the inguinal glands; he was certain such was the case so far as the penile and membranous portions of the urethra were concerned, and thought it applied to the prostate portions as well.

Dr. Adami pointed out, in reply to Dr. Smith, that here was not so much a question of the urethra and its lymph supply as of the prostate. He thought that it was generally held that the lymph about the neck of the bladder passed to the retroperitoneal glands. Here the prostate would seem to have been primarily affected; its lymphatics pass to a gland in the lateral true ligament of the bladder.

A Case of Occipital Meningocele—Dr. Kenneth Cameron read the report of this case, as follows:—

Meningocele is a congenital hernia of the membranes of the brain through an opening in the skull, the protruding sac being filled with fluid, but containing no cerebral substance; the most frequent situation for it to occur is in the occipital region in the middle line. The following case is a typical illustration of this fortunately rare malformation.

On the evening of the first of November last I was called to see Mrs. A., in whom labour had just commenced. She was a primipara, a large, strongly built woman above the average height and weight. The course of pregnancy had been uneventful and had reached full term. The pains were so sharp and the pelvis so roomy that a rapid and easy delivery was expected, but after a little the pains became less frequent and less severe, until they finally ceased and did not commence again until next morning at 10 o'clock. The position was right occipito-anterior, and the head very soon began to bulge the perineum, where it remained, though the pains were severe and the expellant force great. The cause of the delay could not be

determined, so after waiting an hour chloroform was administered and the forceps applied. Even with this assistance at first no advance was made, but suddenly the head was delivered and the cause of the obstruction found to be a tumour on the back of the child's neck. The child did not breathe for some time and not freely for over an hour. The mother's recovery was rapid and complete. The child was a well formed, well nourished female of about 7 pounds weight. On the back of the neck, just below the occipital protuberance was situated a large irregular, slightly lobulated, sessile swelling, the greatest circumference being around the base and measuring $8\frac{3}{4}$ inches, horizontal measurement $3\frac{1}{4}$ inches, longitudinal measurement $4\frac{1}{2}$ inches. The occipito-frontal circumference of the head was $13\frac{3}{4}$ inches.

The skin over the upper segment was normal looking and covered with hair, but over the centre was very thin and translucent. The tumour was quite irreducible, no pulsation could be felt, but there was a marked increase in tension when the child cried, and when pressure was made the child ceased crying; no other symptoms were produced even by hard pressure; a distinct wave of fluctuation was felt, not only through the tumour itself, but between the anterior fontanelle and the tumour; there were no paralyses. In addition to this deformity there was a cleft palate, the fissure involving the soft and hard palates in the

median line as far forward as the inter-maxillary bone, but no further; there was no hare-lip. In every other respect the child was perfectly formed; the bowels and kidneys acted well within twenty-four hours. The child being quite unable to suck, great difficulty was experienced in feeding it; the mother's milk, of which there was a plentiful supply, was carefully drawn off and administered with a spoon, but within a few days it became evident that digestion was imperfect, the milk passed more or less unchanged and the stools became green, but on the milk being peptonized they assumed a more normal appearance. Increase in the size of the tumour and marked increase in the tension was observed from day to day, the child became very fretful, crying and moaning, and sleeping but little. On November 10th, eight days after birth, assisted by Drs. Allan and Springle, I operated. An incision was made in the median line and the skin dissected down to the base. Three and a half ounces of clear, straw-coloured serous fluid were slowly removed through a trochar and the sac was then opened. It was formed by the distended membranes and contained no cerebral substance. The opening, which was separated from the foramen magnum by only a thin band of membrane, was $\frac{7}{8}$ of an inch in diameter and almost circular, and through it could be seen the medulla and upper part of the cord.

The superabundant membranes and skin were cut off, the edges of the sac being brought together by a purse-string silk suture, and the skin wound united by buried silk sutures and enveloped in an iodoform and sublimated gauze dressing. The wound healed by primary union, the dressings having been changed on the second and tenth days.

The condition of the child was greatly improved after the operation; she slept well, cried but little, took her food and digested it well, and gained in weight. This improved condition lasted for two weeks, when an acute gastritis was set up, the milk was rejected and the stools again became green, and in spite of all treatment the child rapidly sank, wasted and died on December 3rd, just thirty-three days after birth. As the child failed it was evident that the hydrocephalus was rapidly increas-

ing. At no time, however, were there symptoms pointing to cerebral irritation, except during the last two days, when slight twitching of the mouth and eyelids was observed.

A post-mortem of the head only was obtained. On opening the skull a little over an ounce of clear serous fluid escaped, the membranes and surface of the brain were pale and showed no signs of inflammatory action. Considerable thickening was ob-

served about the site of the incision which had completely united. The lateral ventricles were considerably dilated, but nothing abnormal observed about the fourth ventricle. The opening in the occipital bone is continuous with the foramen magnum, and extends through nearly half the diameter of the occipital portion of the bone ; it measures one inch in its greatest breadth.

Treatment of Alcoholism by Hypodermic Injections of Nitrate of Strychnia—Dr. McConnell read a paper on this subject as follows:—

In *Merck's Bulletin* for August, 1891, a brief notice of Dr. Portugalow's experience with the nitrate of strychnine in Dipsomania is given. He claimed to have cured 455 cases, and asserts that he knows of reliable and specific remedies for two affections only: strychnine for the various forms of alcoholism, and quinine for malarial fever. He used a solution of six centigrammes in fifteen grammes of distilled water, giving from one-quarter to one-half gramme hypodermically once or twice daily, ten to sixteen injections completing the treatment. Similar results were obtained by Dr. W. N. Jergolski, and others, in Russia, Germany and Italy.

That strychnine, cocaine, atropine, capscium, cinchona, and other nerve tonics had been employed with advantage in alcoholism is a fact generally known, but that such brilliant results could be obtained by such a well-known remedy as strychnine, properly administered, filled a gap in the therapeutics of a disease with which, hitherto, medication had mostly been fruitless, and which could only be regarded and hailed with grateful appreciation by the general practitioner who could hitherto do so little for this,—by no means small,—class of afflicted humanity.

I have treated during the last 15 months some 30 cases, 25 of whom received the full course of injections; the results will, I think, demonstrate what benefit we can obtain from it in this form of narcomania. Due attention was paid in each case to the associated derangements and the constitutional peculiarities. The patients all came to the office for treatment, and although recommended to abstain from further drinking were allowed to take liquor if they desired it. The dose given subcutaneously varied from one-thirtieth to one-sixth grain twice daily for ten days, then once daily for ten days, the highest dose being reached about the third or fourth day and continued to the close of the treatment. This being nearly in accordance with

Spitzka's experiments, that to maintain its action the doses of strychine must be in the beginning increased, and later the interval increased and the doses lessened. The border line of tolerance was reached in most cases when one gramme was used of a solution containing 12 centigrammes strych. nitrat. to 15 grammes water, that is about two-fifteenth grain. Internally cinchona, peroxide hydrogen and capsicum were frequently prescribed in combination When bromide of sodium failed to procure sleep, paraldehyde always succeeded. In the later cases strychnine in doses of one-twentieth grain, with elixir of phosphate and calisaya (Wyeth's) was ordered to be taken once or twice daily for four or five weeks after ceasing the injections.

The following brief reports of each case are condensed from the notes taken in detail during the progress of the treatment.

Two solutions were used, one containing six centigrammes to fifteen grammes water and in the later cases one of double the strength, equal to two grs. to the half ounce. The weaker solution was used in all cases unless where the stronger is mentioned.

Case I.—November 10, 1891, insurance agent aged 50, has used alcohol since 12 years of age and to great excess since 20, and more or less continually during the last four years; marked family history of alcoholism. Patient is small in stature, emaciated, tongue thickly coated, tremulous, has had very little sleep for a week. Gave a purgative and potassium bromide.

On the 11th began the injections, giving ½ gm. twice daily. He states that after a prolonged spree, during the first, second and third weeks of abstinence he suffers from cramps in the limbs, and for four years has had night sweats; had no cramps after first injection and claimed to have no desire for liquor after the first day. At the end of the first week of treatment he showed remarkable improvement in every respect; had a ravenous appetite, slept well, no depression, and very sanguine as to the virtue of the treatment. During the second week had one injection daily, when the treatment ceased. He then claimed

to enjoy as good health as ever before. He reported from time to time the entire freedom from desire for liquor, and remained so for eleven months, during which time he had no regular work. Having got a situation, after his first pay he ventured a glass of liquor, when the ardent crave was rekindled and a prolonged debauch followed.

Case II.—Moulder, aged 50, is a strong, robust man. No family history of alcoholism or other neurosis. Received a blow on the forehead about 30 years ago, where a depression still exists; began his drinking habits after that; has drank hard during last 15 months and is now imbibing all he can procure, sometimes 40 glasses of liquor daily. Had two injections twice daily for a week; took no liquor after the first day, and after the second day claimed to have no desire for liquor. He became ill with la grippe, having received 10 injections. I heard from him four or five months after and learned that he had not up to that time partaken further of spirituous drinks.

Case III.—Insurance agent, aged 46; has a neurotic family history, there being cases of alcoholism and insanity. Has drunk steadily for 30 years. I requested this patient to drink all he wished during the treatment. He was poorly nourished, not having the means to properly maintain himself owing to his habits. Drank 20 glasses of ale first day of treatment, the number diminishing daily until the end of the first week, when his desire ceased. At the end of second week he appeared free from the drink crave and had improved very much in his physical condition. At the end of two months he again resumed his drinking habit; his relapse was attributed to his unwillingness to give up his life-long habit of ale at meals.

Case IV.—Advocate, aged 40; has drunk inordinately for about 10 years; no hereditary cause; attributed the acquirement of the habit to the treating custom. Suffers from gastritis with morning vomiting and sleeplessness; gave sod. brom. and calumbo and parvules hg. subchlor. 1-20 gr. every hour. Gave first injection December 17th; found a tonic effect after first injection; no vomiting after next morning; took liquor daily

until 25th ; none after, all the catarrhal symptoms disappeared after the first week of treatment and also the desire for liquor. Ceased the treatment on January 1st, patient feeling quite restored. In a couple of months he had relapsed into his old condition.

December 26, '92, came to have another course of treatment, having confidence in its power to relieve him of his desire for alcohol. The gastric symptoms were predominant ; the strong solution was used, beginning with 5 degms. and increasing daily until 10 was reached ; gave two injections daily for 10 days and one daily for 10 days longer. After fourth day gastric symptoms were quite relieved and desire for drink gone ; attempted a glass of wine a day or two after but found it flat and distasteful. While taking two full doses daily, on two occasions noticed for a few minutes involuntary contraction of upper limbs ; since end of first week appetite and digestion have been good, and he claims to feel better physically and mentally than for months. He, however, will not consent to total abstinence for the future, which to those who can only drink immoderately is the only remedy.

Case V.—Printer aged 40 ; single ; a drunkard for about 20 years ; no hereditary predisposition ; accustomed to be off work two and three days each week ; began treatment December 30th, 1891 ; the ordinary solution ; had no desire for alcohol after first injection, recovering in a week his accustomed health. On inquiry I find he remained well for eleven months when he again resumed his drinking habits.

Case VI.—Painter, aged 50 ; has drunk spirituous liquors since 18 years of age ; father was a hard drinker ; he cannot sleep and has no appetite ; constipated ; tongue coated, smooth at tip and edges ; has an intense crave for alcohol ; drank a few hours before beginning treatment ; took no alcohol after first injection ; was at a dinner party four days after where liquor was used, but had no desire for it and took none. After 15 injections was discharged much improved in general health and changed in his appearance.

Case VII.—Corset maker, aged 32; has used liquor for 15 years and excessively for 10 years; went on protracted sprees at irregular intervals; treatment continued from July 5th to 20th, 1892; was drinking when the first injection was given; no desire for liquor after second day, and steady progress afterwards towards his usual condition of health in the intervals of sobriety; four months after again resumed the habit.

Case VIII.—Feb'y 9th, 1892, Druggist, aged 29; used alcohol since 9 years of age; had not taken any for two years previous to three months ago; had made many attempts to give up the habit but without success; no heredity; no insanity or nervous disease in family. Desire for liquor left after second day; stated that he had not experienced any of the symptoms of nervousness and depression observed at other times when breaking off; at the end of the two weeks treatment was in good condition and no desire for stimulants. Some two months after learned that he had relapsed.

Case IX.—Auctioneer, aged 42; has drunk intoxicants for about 30 years, during last 6 years almost constantly; was irregular in his attendance and got about 20 injections; began drinking immediately after.

Case X.—Waiter, aged 55, July 15th, has used liquor since he was 20 years of age; father drank; has abstained at intervals of 2, 3, 6 and 11 years. The last six years' abstinence ended a year ago, when brandy was recommended for sleeplessness, since then has drunk more or less constantly; was intoxicated when he got the first injection, July 15th, 1892; much gastric derangement and sleepless. Sod. Brom. used to procure sleep; had no desire after the first day and has not drunk any since.

Case XI.—Aged 40, Feby. 25, 1892, no occupation; interdicted for some six years, a chronic inebriate with inherited predisposition. When first injection was given was in a stupor and semi-paralysed; had been drinking very hard for two weeks and had for the last week taken 60 grs. sulphonal at

bed-time, furnished to him on his own application by a druggist. At the end of two weeks had improved very much and for a week had not asked for stimulants. He then went out for a drive, and passing a saloon to which he was accustomed to go could not resist the temptation to enter. He was then placed in a private ward in hospital and the injections given for three weeks. After the fourth day did not ask for liquor and at the termination of the treatment had quite recovered himself and left, stating that he had no desire for alcohol and that he would not again touch it; three days after he had broken his resolution.

Case XII.—Gardener, aged 33; Feb'y 23; has taken liquor since the age of 15; father drank. Patient gets intoxicated every pay night (Saturday) and would return to work Tuesday. He drank soon after the first injection; had two weeks treatment, one injection daily. He remained a total abstainer for five months. Reported himself again for treatment on December 9, 1892; had gone on a visit to the United States and while in company was induced to take a glass of beer, and for last four months has drunk more or less constantly and has been drunk daily for the last four weeks. Put ant. tart. into his accustomed liquor and advised him to use it for a day or two. While under the treatment it caused considerable nausea and vomiting; used the stronger solution twice daily for ten days and once daily for ten days longer; was free from the craving after the first day; took the tonic for five weeks, two days after it was finished began drinking again.

Case XIII.—March 1st, 1893. Widow, aged 44, has used liquor for 20 years, inordinately for four years; suffers from chronic gastritis, pains in the hands and feet. At the end of first week inclination for her usual stimulant had left and her gastric symptoms had much improved. During the first week of treatment she avoided passing the saloon which furnished her with whiskey, fearing that she would not have the courage to do so without calling. After the first week she passed it daily and was quite free from desire for alcohol; remained all right for six months.

Case XIV.—March 5th, 1893. Commercial traveller, aged 37, single ; has been an alcoholic for 17 years ; father drank. Took rye during first five days of treatment, but states that its effect is different to what it usually is, its effect being scarcely noticeable ; he thinks that under the influence of the injection one can take larger quantities of alcohol without its having the ordinary effects ; increased his injection to 1-20 gr.; after fourth day had no desire for his accustomed rye. On the thirteenth received some unpleasant news and tried to assuage his feelings with rye, but it was not gratifying and he took no more ; remained all right one month only.

Case XV.—March 9th, 1893. Civil engineer, aged 42, has used liquor for 21 years ; father drank. One gm. doses given ; lost all desire after fourth day ; three months after had resumed his drinking habits.

Case XVI.—March 27th, 1893. Butcher, aged 26, an inebriate for eight years ; father uses liquor, but not to excess ; one brother a hard drinker. Gave 30.1 gm. injection ; lost desire for alcohol after fourth day and has remained an abstainer to this date.

Case XVII.—March 28th. Telegraph operator, aged 40, a drinker for 25 years ; no hereditary predisposition ; sleeplessness and gastric derangement. Took no liquor after first injection ; made a satisfactory recovery ; relapsed four months after.

Case XVIII.—April 5th. Broker, aged 47, has used liquor for 47 years, latterly is constantly under its influence ; marked nasal acne ; much gastric distress. Combined 1-120 grain atropine with the strychnine once daily ; had three weeks' treatment ; took liquor daily until end of first week, after that had no desire whatever. Stated at his last injection that he did not wish to give up the habit of using wine at dinner; he was advised of the danger of not doing so. Some two months after he was as bad as ever.

Case XIX.—July 11th. Commercial traveller, aged 41, single, no inherited tendencies ; has used liquor since 18 years

of age; now goes on prolonged sprees; has gastric catarrh; gave internally peroxide of hydrogen, tr. cinchonæ co. and tr. capsici. Used no liquor after first injection. Gave him a mixture to take for a month after his treatment, containing strych. nitrate in elixir of the phosphates with calisaya (Wyeth's). January 12th, six months after, reported having been a total abstainer ever since, although daily in places where liquor is retailed.

Case XX.—September 8th. Manager boot and shoe factory, aged 60; used alcohol first at 20 years of age. At 27 used it excessively; goes on prolonged sprees three or four times a year: has now been drinking four weeks; no hereditary tendency; patient is much debilitated; no appetite and cannot sleep; paraldehyde gave sleep; no desire for liquor after fourth injection, when he returned to his work and has remained well to date.

Case XXI.—October 3rd. Clerk, aged 37; has used liquor for 11 years; no hereditary predisposition; uses mostly whisky; sleepless; paraldehyde gave sleep; got 30 injections; no desire for liquor after two or three days. At the end of his treatment was feeling unusually well. He has remained at business and has not taken any liquor since.

Case XXII.—October 3rd. Agent, aged 59; has used liquor since a boy, and up to 55 years of age could get drunk every night and be up at work the next day, since then has been a confirmed inebriate; both parents were very intemperate. The injections within two days had improved the condition of his stomach and lessened the desire for alcohol. He continued his beer during the first week—a glass or two at bedtime. A couple of days before the treatment was completed he left the city for two days, and at a gathering of friends indulged very freely.

Case XXIII.—Traveller, aged 40; had a sunstroke in 1880; no hereditary influences. Although he took a glass of ale occasionally it was not until after the sunstroke that he be-

gan to indulge freely; has now been drinking steadily for four weeks; he was sleepless and on the verge of delirium tremens; secured sleep readily with paraldehyde and sod. brom.; began with 7 dcgms. of the stronger solution, increasing it up to 10; 30 injections; drank none after first day, and made a rapid recovery, resuming work within a week.

Case XXIV.—November 26th, 1892. Carpenter, aged 34; began to drink seven years ago. Takes two or three days continuous drinking spells at irregular intervals; last one continued a week; not inherited; sleepless and no appetite; three doses paraldehyde gave sleep; gave 30 injections, beginning with 7 dcgms. strong solution, 10 after third or fourth day; took no liquor after first injection; went to work on the second day and made a rapid recovery to his normal condition, and remained well to date; took the tonic for one month.

Case XXV.—December 8th, 1892. Broker, aged 30; has used alcohol for about eight years; excessively for six years; no heredity; much gastric derangement; gave a purgative of powdered rhubarb and calomel and sodium bromide peroxide hydrogen trs. calumba and capsicum internally; required paraldehyde to get sleep; blood examined; there were 4,400,000 corpuscles to the cubic millemetre, about 7-10ths of these were very irregular in shape, shrunken with jagged edges, some of the projections acute, others truncated; no craving for alcohol after 3rd day of treatment; 30 injections, all 10 dcgms. after 3rd day. Although mingling with his old associates daily in places where liquor was sold, felt no desire whatever for it; appetite was good and he appeared fully restored to his usual health.

From the results obtained in these twenty-five cases we can learn that simultaneously with the use of this remedy the crave for alcohol in inebriates diminishes and in a few days is completely gone, and through the withdrawal of the poisonous beverages and the tonic effects of the strychnine there is a more or less rapid restoration to sound physical health and of the mental powers; but as most of those treated have relapsed within from

one to eleven months, the inhibiting power of the remedy is not permanent, and while it temporarily relieves the distressing and overwhelming crave for more stimulant and promotes a return to normal health and in which condition these patients may continue to remain, yet they still lack the necessary will power to enable them to avoid the dangers which they know will precipitate a return to their previous enslaved and degraded condition. So that while it is fully within the power of medical science to restore these patients to temporary health, strychnine does not —as doubtless no drug treatment ever will—prevent the possibility of further relapses, although we can always depend on it to arrest what would be a prolonged debauch if its aid is early resorted to.

That weakened will power is a result of the prolonged use of alcohol is generally conceded, as is the fact that the tendency to alcoholism is in a large percentage of cases inherited, and that it is often as dipsomania one of the manifestations of insanity. A definite series of pathological conditions follow the continual indulgence in alcohol, differing only in degree in the milder methyl to the powerful effect of amyl alcohol, the nervous system showing the earliest and most marked disturbance, although every organ and tissue in the body eventually suffers. These and many other facts have led neurologists to place alcoholism as a distinct disease among the neuroses.

This position implies a complete revolution in the methods of treating these cases, and has brought to the aid of philanthropists and moralists the assistance of the medical profession, upon whom now devolves the duty of further elucidating the true pathology of the disease and indicating the best means of restoring this numerous class of patients to a normal condition.

That the urgent demand for relief from the evils of intemperance is being recognized by the profession is evidenced by the increased interest taken in the work of the American Association for the Study and Cure of Inebriety, and in the section for the study of inebriety of the British Medical Association, and an ever increasing number of scientific investigators throughout the world.

Before rational and effective measures can be adopted for the proper management of inebriety we must have correct opinions in regard to the physiological actions of alcohol and the pathology of the disease, otherwise we must trust to the empirical results of experience.

The decomposition of alcohol which takes place in the economy, is not yet known. It has been generally accepted that from 1 to 2 oz. can be oxidized in the system, giving heat and force to the extent of the oxygen used, but the tissue changes are lessened as evidenced by the diminished excretion of urea, and CO_2, and to the degree that they have been robbed of O by the systemic digestion of the alcohol; from this fact has sprung the idea that it conserves the energies and lessens waste, and on this assumption it is frequently prescribed as a sustaining remedy; but a view which would appear to be nearer the truth of the matter, is that which denies that alcohol is a food in any sense, but being a ptomaine, a result of decomposition, it is like them generally, a poison in all its actions. That it is not oxidized in the system, but that it combines with the hæmoglobin and destroys its functions of absorbing O, the diminished urea and CO_2 being in this way accounted for. Other observers have demonstrated that the leucocytes have their vitality lessened by the continued use of alcohol, and in harmony with our recent views on phagocytosis this fact would explain the greater susceptibility of drunkards to the action of pathogenic bacteria, and their lessened resisting power in throwing off disease, although Mortimer Granville maintains an opposite view on this point, and claims for alcohol drinkers a greater immunity than abstainers. That the red corpuscles are profoundly altered was observed in the last case I reported, the only one in which the blood was examined. We have here the evidence of a veritable poikilocytosis in a subject where neither aglobulism nor achromatosis existed. Most of the effects of alcohol are apparently explained by its paralyzing effect on the vaso-motor system, from the first contact; we have also the slight stimulating effects on the heart of small doses, and its local and reflex irri-

tant action on the alimentary tract, which results in increased buccal and gastric secretion, thus favouring digestion. But even this advantage is not upheld by the recent experiments of Blumenau, who found that the total action was impairment of digestion, and when we take the fact that even the stimulating effects are quickly changed into paralytic conditions, and when often repeated leading to exhaustion of every function and more or less general degenerative changes throughout the body, we can readily understand how we are to get beneficial effects from drugs having the action of strychnine.

The chief action of alcohol, then, is to paralyze the vaso-motor system, dilating the arterioles. Strychnine, besides exalting the excitability of the spinal cord and probably the motor centres in the brain, stimulates the vaso-motor centres, contracting the arterioles, as well as being one of the most efficient heart tonics, through its stimulating effects on the cardiac ganglia.

While we have in strychnine a true antagonist to the action of alcohol, and one that will counteract its effects, the inebriate still requires aid which can scarcely be expected of drugs. He needs the mental and will power to overcome his acquired or inherited tendency to resort to narcotics. This must come from treatment which seeks first to restore all the abnormal conditions of the patient, whether due to alcohol or otherwise. Then strict abstinence, in which must be aided by moral suasion, the diversion of continual employment, and the education of the mental and moral faculties to a higher status; even the influence of hypnotic suggestion may be applied in suitable cases, as has been done recently with a fair measure of success. And when these means fail, then institutions where voluntary or forced detention can be secured and where all the present known means can be most successfully applied, must be the only hope of restoring these unfortunate subjects of narcomania.

Discussion.

Dr. Gordon Campbell said that it is claimed that by the hypodermic administration of certain drugs you get an effect

not obtained when absorbed by the stomach. Of these drugs strychnia is one of the best examples, and by giving it hypodermically and rapidly increasing the dose it is believed you get the full momentum of the drug, an effect not otherwise obtainable.

Dr. Smith did not believe in a tendency to alcoholism being inherited.

Dr. Guerin said that he had had some experience in the treatment of alcoholics, but has never yet used strychnia. If there is any good to be derived it is simply by means of suggestion: we should make patients understand the injury they are doing to themselves. He generally gives them some mild sedative, some hypnotic; and further than that, stops the stimulant, and as a general rule gets very good results. From what he had heard of the paper, no exceptionally good results have been claimed for strychnia, as the majority of the cases relapsed within a few months. He was glad to see this question ventilated, as it is a subject much spoken of lately, and to learn through Dr. McConnell's paper that after all there is not much to be expected from it. The apparent good results are due largely to the moral influence of the introduction of the needle and the impression which the patient receives that a very powerful remedy is being employed in his behalf and that consequently the results must be very great.

Dr. Geo. T. Ross did not think that the hypodermic administration of strychnia had any peculiar action in the case of chronic alcoholism. Its use is indicated in all cases of gastritis or other affections where the stomach will not retain anything. Vomiting is a common feature in these alcoholics, and the increased effect of the drug when administered hypodermically may be due not to any special power in the drug itself, but rather that it is better absorbed in that way. He has used hypodermics of strychnia in the vomiting of pregnancy, and in cases of gastritis due to causes other than alcohol, and with, in every case, satisfactory results.

Dr. Proudfoot thought that Dr. McConnell's paper clearly shows that in strychnia we have a drug which will destroy the appetite for alcohol; and even if only for a few weeks it is hence a great boon. There are many cases where

men have been incapacitated for days and months at a time by this habit, and if we know that the nitrate of strychnia will remove or destroy the taste for whiskey and break up an attack of this kind, it is a very valuable piece of knowledge, and something that it would be very well for every doctor to become practically acquainted with.

Dr. Anglin said that inebriates were not received in the asylum unless they can be proved insane; he thought this a pity, as in his opinion the best treatment of all for the inebriate is to put him in some home where he is removed from the contact or possibility of drink.

Dr. Stewart has had no experience in the treatment of alcoholism by strychnia. Of course if the latter has such a power it might be readily proven; half a dozen medical men could, in the course of their practice, confirm or refute these claims in a week. He questioned very much whether any drug has that power.. Two or three years ago there was a great deal of talk made in connection with hypnotism, but so far as he can read on the subject, hypnotism is practically useless in this respect. In fact, until general moral measures are more advanced there is very little to hope for from any kind of treatment.

Dr. Reed thought it is bad that the idea should become popular that the craving for liquor was a disease instead of a vice.

Dr. McConnell said, in answer to Dr. Guerin's remarks as to getting equally good results by the administration of tonics by the stomach, the quantities administered could only simply exercise a local tonic action on the stomach. Again, we have to distinguish between a sort of mania for alcohol and the effects of alcohol on the system. Most of the vaunted cures we hear of claim to cure alcoholism out and out; now, we can never expect such an effect from any drug. To transform the desires of an individual so completely as to cure him for all time from a distinct neurosis is something that it is hardly reasonable to expect from the administration of a dose of medicine. By using the drug hypodermically you get the action more purely. It is a well known fact that the liver is the great disinfecting organ of the body, and were it not for its destruc-

tive powers on the ptomaines we could not live. Just as it does this, all agents administered by the stomach are diminished in their physiological powers, so that by giving them hypodermically we get nearly double the action and very much better results.

From the results of his cases we may conclude that the strychnine simply restores the original condition; when the desire relapses a few more doses will cause it to disappear in the course of a few days. Take a man who is practically useless to his family, if you can destroy the appetite for even three weeks, is it not a decided advantage?

In regard to what Dr. Stewart said about hypnotism it is much on the same line as the other remedies. We can find no single remedy to eradicate the alcoholic habit, but every means that helps towards that end should certainly be adopted. Dr. Stewart's paper on epilepsy, read some time ago, simply looked for cure in educating the brain in every way possible; and the same line of treatment must be adopted in alcoholism. The inebriate must be surrounded by a higher moral tone, and every means we know of to elevate the human being adopted before we can expect any permanent results.

Stated Meeting, February 17th, 1893.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

Retro-peritoneal Myxo-lipoma.—Dr. ADAMI gave a history of and described a retro-peritoneal tumour of great size which he had received from Dr. Hannay, of Perth. A photograph and portion of the tumour weighing several pounds was exhibited to the Society.

Intra-mural Myoma of the Uterus.—Dr. ADAMI exhibited a large specimen of this condition which he had received from Dr. Alloway, which with the attached portion of the uterus weighed close upon two kilos. The specimen had been cut through from side to side longitudinally by Dr. Adami and showed well the relationship of the various parts. The globular mass of new tissue originated evidently at the uppermost part of the uterine wall, and growing down into the cavity of the organ had completely filled it; but its intra-mural origin could be clearly seen, inasmuch as at the edge where the projecting part of the mass joined the uterus the inner layers of the uterine muscle were reflected over the growth. The tumour was a typical uterine myoma. The specimen was exhibited to the Society on account of its relatively large size, and of the very considerable hypertrophy that the uterine wall had undergone *pari passu* with this growth into the cavity. The presence of this large globular mass arising from the fundus of the uterus and the hypertrophy of the walls gained further interest from the fact that this condition had led more than one medical man attending the patient to make the wrongful diagnosis of eighth month pregnancy.

Dr. T. JOHNSON ALLOWAY detailed the history of the preceding case. The patient was 42 years of age and had borne four children, the last four years ago; had had several opinions as to the nature of the growth, and on two occasions had been told that she was pregnant. This was not surprising, the tumour being one of those rapidly growing myomata

with a loud bruit, synchronous with the heart's action, heard over most of its surface, a form very difficult to differentiate from pregnancy. She was first seen on the 24th of January, and the operation was performed on the 31st of that month, during which time she remained in his private hospital and the usual preparatory measures were adopted.

The method of removal was by total extirpation, through an abdominal incision, of the ovaries, tubes and whole uterine body, including the cervix, as described by Eastman.

Any lacerations or tears of the peritoneum were closed by continuous sutures; this procedure takes but a few minutes and by it the cavity is totally closed.

This patient had for her highest temperature 99.6°; the pulse never exceeded 104. She made, in fact, a recovery that was surprising to him and to his colleague, Dr. Gardner, knowing the great gravity of the operative procedure. It is now two weeks since the operation and she will probably go home in one week more.

In this method of removing so large a myomatous body there is the great gratification of knowing that the convalescence is so short, so smooth, and that there is absolutely no necrotic tissue left to give rise to septic changes. In the extra-peritoneal method, on the other hand, there is necrotic tissue and a great danger of sepsis, so that the patient is not really out of your hands until all this necrotic tissue separates, which does not take place for 12 or 14 days after the operation. By this method after the fourth or fifth day you may declare her absolutely free from any untoward results. Now, with reference to the other methods besides the extra-peritoneal one that have been adopted in such cases, such as where the pedicle is dropped after suturing the cervix with buried sutures, and a modification of Schroeder's old method, lately devised in Baltimore, whereby sutures buried and passing through the centre of the cervix were ligated on either side and the peritoneum turned in and sutured; these have all the two great dangers attending them of hemorrhage and necrotic changes taking place. In Eastman's method there is no danger whatever of this nature, there is no uterine tissue left to unite, only vaginal tissue, and that is covered by peritoneum. There is no doubt that this last method is a great im-

provement on all previous ones, the one drawback it has is the great difficulty of its performance. It is certainly the most formidable operation in surgery and requires not only the greatest skill, but also the greatest endurance.

Dermoid Cysts of Both Ovaries.—Dr. Adami exhibited two ovaries received from Dr. Alloway, both of which contained dermoid cysts. The right ovary was represented by a large, relatively thick walled cyst 4½ inches in diameter. This upon first opening was found to be filled with a brownish blood stained fluid, and in this could be distinguished old blood clot, a large amount of fatty debris, cholesterin crystals and hairs. On removing these and washing out the cavity two fully formed teeth were found projecting into it from a patch somewhat raised above the level of the rest of the wall, and upon this patch were numerous hairs growing from the epithelial coat. The fat was due in part to degeneration of the cells and cell-debris thrown off the surface of the cyst, but probably, as has been found in other dermoid cysts, it has been given off from sebaceous glands associated with hair follicles and epithelium

This tumour, presented, therefore, the most common and characteristic features of an ovarian dermoid. That it was ovarian was manifested by the presence of portions of the fallopian tube still attached, and of a small cystic graafian follicle imbedded in its walls. The interest of the case centres in the more unusual feature of the other ovary being similarly affected, though with multiple dermoids of smaller size. This, the left ovary, contained several small cysts, and one of these had its walls fairly well developed, there being a well marked cutis with small hairs growing therefrom. Two other rather larger cysts, the more important being ¾ inch in diameter, contained hair and fat, others again still smaller had merely fluid contents. In this specimen a fair amount of tissue still remained.

Dr. Adami called attention to the interesting series of cysts presented by these two ovaries, from minute cavities which apparently represented dilated graaffian follicles, up to the large typical dermoid cyst of the right ovary. Cases like this, tending to throw light upon the dispute as to the origin and production of ovarian dermoids, are of high value.

Dr. Alloway called attention to the interest attaching to this case, the presence of two dermoids in the same patient. The condition is relatively rare, Dolan in his account of 31 cases finding only 7 in which the condition affected both ovaries, that is to say, but a little over 20 per cent.

The history of the case was as follows: The patient, a resident in the United States, underwent examination in Philadelphia and again in New York two years ago, and there already the diagnosis was given of pelvic tumour. Accompanying her husband, who had come to Montreal on business, she here began to suffer severely. She consulted Dr. Thompson, who referred her to Dr. Alloway.

It was difficult to make out her condition without putting the patient under ether, but when this had been done the uterus was found to be anteverted, there was a tumour in the right pelvis, low down and impinging upon Douglas' pouch. This filled the whole upper third of the vaginal space and encroached somewhat upon the left but did not involve the left pelvis. The diagnosis was given of a pelvic tumour, probably containing fluid. The tumour was fixed but separate from the uterus and certainly not connected with that organ. The question was as to whether it was a dermoid or a cyst of the broad ligament. From the fact that the tumour had been diagnosed two years ago, and that only when these tumours become large and irritation and inflammation set in is any pain experienced and a physician summoned, makes it probable that the tumour in this case had been in existence for a long period growing slowly, and this led to a conclusion in favour of its dermoid nature.

At the operation numerous adhesions were encountered. The tumour was adherent to the posterior face of the broad ligament and to the wall of the pelvis on that side. It was also adherent to the wall of the rectum for a considerable distance. In such cases there is great danger of entering the rectum. To guard against this complication Dr. Thompson, who assisted at the operation, was asked to pass his fingers up the rectum and keep them there as a guide while the adhesions were separated. The operation had been performed four days previously and the patient had remained perfectly well, the temperature never exceeding 99.5°.

Dr. Alloway, continuing, said he had now given up silk ligatures in these cases. He finds Keeler, of New York, the most reliable source to procure catgut from; the size No. 0 ligature (simply the base fiddle string) is that used. It is, in his opinion, the best ligature extant to-day where there is a large amount of tissue to be brought together. He made an experiment some time ago with reference to the difference between catgut and silk. It was with reference to the reputed property catgut has of shrinking when moistened, whereas it is well known silk remains absolutely the same. He took a piece of sea-tangle tent, saturated it for some time in water, so that it was fairly expanded, then tied upon it above a silk ligature, and below one of catgut (No. 0). They were both tied equally tight. The tent was placed in a jar of sublimate solution. About one week afterwards he took it out and found that the catgut had cut a ridge into the tent, the silk remained perfectly the same. That was an absolute proof that the catgut does shrink. It is this power of shrinking under moisture that makes it superior to silk in operations of this kind. Tissue shrinks after operations, and in the case of silk this shrinking implies a loosening of the ligature, which is most commonly the cause of hemorrhage. Now, in the case of catgut this loosening does not occur, the ligature contracts with the tissue, and hemorrhage is a much more rare occurence where the latter is used.

Fibrinous Cystitis.—Dr. Adami exhibited specimens and microscopic preparations from a case of this condition, for which he was indebted to Dr. (Miss) Dougall. The casts had been passed upon three or four separate occasions of late, there was severe uterine disturbance, a history showing that the material had been passed coincidently with a menstrual period, and while these thin white fairly firm fibrinous membranes were evidently casts from some cavity, the question had arisen as to whether that cavity had been the uterus or the bladder. The history of uterine disturbance first attracted attention to the uterus, but in the first place this had been filled by a new growth, and in the second place examination of the fibrinous material both in fine sections and by teasing failed to reveal any uterine cells, or orifices of uterine glands. On the other hand flattened cells resembling bladder epithelium

were present. There had been cystitis for the previous fortnight with the passage of a relatively large amount of pus, and with the passage of the casts the condition of the urine improved, the number of pus cells diminished. The membranes and membranous shreds were passed after great pain and difficulty. The passage greatly eased the patient.

The condition in this case is rather at variance with the rare cases that have been described as exfoliative cystitis. Thirty or more such cases have been narrated, mostly in women, and in connection with labour or serious uterine troubles. In these, after great pelvic disturbance, the history given is that of the passage of a more or less complete cast of the interior of the bladder, and upon microscopical examination the cast is found to be composed of a large amount of fibrine, and incorporated in this what are evidently the inner layers of the bladder wall; in many of the cases, not only epithelial layers, but a certain amount of the muscle tissue of the bladder wall has thus become exfoliated.

In the case in question a singularly small amount of anything like the element of the mucous membrane of the bladder could be seen embedded in the fibrine, though there were numerous pus cells. The case is consequently described as one of 'Fibrinous cystitis' rather than 'exfoliative.' True exfoliative cystitis would seem in all cases to be due to a stoppage of the circulation in the vesical walls in consequence of more or less long continued closure of the vessels by pressure. It is in fact a necrosis of the inner layers of the bladder wall. In this case the condition has been neither so extreme, nor has it been of relatively sudden onset. That there has been obstruction of the pelvic veins is shown by the existence of phlegmasia alba of both lower extremities, and to the pressure of the large uterine tumour can be referred the state of the bladder which has rendered the setting up of cystitis a relatively easy matter, That same obstruction of the iliac veins which caused the phlegmasia would affect also the veins of the base of the bladder which pass to the internal iliacs, and Dr. Adami suggested that a very possible explanation of this curious condition was to be found in this obstruction, which leading to a congested condition of the vesical mucous membrane would lead to exudation, and this, when already there was inflammatory dis-

turbance in the organ, would tend to be of a fibrinous coagulable nature. But it would seem reasonable both in phlegmasia alba and in this condition of fibrinous cystitis to take into account also obstruction to the lymph flow of the parts.

Dr. Wm. Gardner, who had seen the patient with Dr. Dougall, gave details of the history of the case, which served to explain the occurrence of the cystitis. The woman from whom the specimen had been taken was suffering from a large myoma, a great part of which was already extruding. The pelvis was nearly filled by this myoma, and in the abdomen could be felt a large smooth mass. The condition of complete filling of the pelvis might account for the bladder troubles on the lines laid down by Dr. Adami. The woman had, in a sense, been in labour for several weeks, her womb trying to extrude the mass; the bladder naturally has been encroached upon and variously disturbed.

Bradycardia.—Dr. H. A. Lafleur reported a case of slow pulse, better called slow heart or bradycardia. The history of the case is as follows: A young man had an attack of acute rheumatism from which he made an apparently good recovery. Present condition seems fair, there being nothing which might disturb the circulatory equilibrium save some periodical attacks of diarrhea. These attacks cannot be traced to errors in diet or any local causes in the intestinal canal. The patient is a a student, tall and spare, chest long and narrow, bulging of the costal cartilages of the left side from the 10th to the 6th rib. Apex beat punctuate, in the sixth interspace in the nipple line. Short purring thrill felt on palpation, also slight diastolic shock. Cardiac dulness extends from the third rib downwards, laterally from the middle of the mediastinum to the nipple line. Auscultation reveals an occasional irregularity, but very seldom. First sound loud and snapping in quality, no trace of murmur; second sound accentuated and reduplicated, heard most loudly at the pulmonary cartilage, and transmitted quite distinctly beyond the area of cardiac dulness. No enlargement of the spleen, no enlargement of the liver, no œdema.

The first count of the pulse was 49, the second count gave from 50 to 54. The character of the pulse is that it is of small volume, but usually quite regular. Respirations were 16 to the minute; temperature not taken at the time; but subse-

quently it was found to be subnormal throughout most of the day. During a period of ten days, during which his temperature was taken three times daily, it only reached the normal point on three occasions. A tracing of a normal pulse with a fairly high tidal wave and a fairly high secondary wave was shown to compare with the tracing of the patient's pulse when it was beating at 54. It shows very typically that this tidal wave is short, (that the artery is not very actively filled, a common condition in obstructive disease of the mitral orifice); it shows besides a very long diastolic period, during which the ventricle is filling, and that is succeeded by the next systole. A tracing taken after exertion was also exhibited, the pulse here is more rapid, nearly 80; it has the same characters as the previous tracing with the exception that the second wave is very well marked, in fact it approaches the condition of dicrotism. When the heart is beating rapidly it cannot be so well filled on account of the obstruction at the mitral orifice.

This condition of bradycardia (slow heart) has been known for a long time; but until quite recently no attempt has been made to collect and tabulate a number of cases. At the meeting of the American Association of the Medical Sciences at Washington recently Prentiss collected over 100 cases in which the pulse beat below 60. The symptom of bradycardia may arise under any varied conditions of disease indeed; and although attempts have been lately made to classify them, notably in the large series of cases collected by Riegel, so far they have arrived at no very satisfactory results. The principal conditions under which one meets with it are (I) injuries to the central nervous system, in injuries of the head slow pulse is often a very conspicuous phenomena; (II) conditions associated with organic heart disease, fibroid disease, fatty degeneration, and much more rarely valvular disease; (III) toxic cases, poisoning by lead and arsenic, eating bad fish, etc.; (IV) anæmia and the cachectic conditions generally; (V) catarrhal jaundice; whether this is one of the toxic cases or not is not clear. The tendency is to group them under two heads (I) where there is organic heart disease; (II) where the nervous mechanism is at fault.

We must probably in some cases take into account the mechanical factor; where there is valvular disease preventing

the filling of the left ventricle the systole is retarded, and there is a prolonged diastolic pause. The prognosis in these cases is not good. It is said to be worse where there is actual organic disease of the heart. The great danger is in lowering the heart beat to an extreme degree, which is known to give rise to epileptiform attacks. An important point to make sure of in such cases is that the pulse and the heart beat are synchronous, as the pulse may be retarded through some obstruction or disease of the vessels, while the heart is normal. In this case this fact was repeatedly observed. As regards treatment, moderate degrees of bradycardia require no treatment. In organic disease, especially where there is failure of compensation, it may and commonly does require cardiac tonics. In other cases where the etiology is not clear, we may resort to symptomatic treatment, here nitro-glycerine seems to have succeeded best. In the face of convulsive paroxysm or fainting attacks the hypodermic use of stimulants seems to be the best.

Dr. Adami—It is a difficult thing here to determine whether one is dealing with a mere mechanical condition, or some condition other than mere stenosis. Sometimes extreme cases of stenosis occur with a normal pulse, and, in a case like this, he would seek the explanation in something else than the condition of the valves. In this very curious case we must have as a cause something further than the condition of the valves; some disturbance of the nerves of the heart; some kind of irritation. But, as Dr. Lafleur has said, the condition is an extremely obscure one. Investigators of cardiac phenomena have ascertained that under certain conditions the perfect sequence of the auricular and ventricular systole may be disturbed; the ventricle may beat at half the normal rate, while the auricle continues its normal rhythm. As an explanation of this, someone recently investigating among the lower animals finds that there is a distinct wave passing from auricle to ventricle, and that the difference in time between these acts is represented by the amount of resistance obstructing the transmission of this wave. So that the reason why the ventricular systole is not simultaneous with that of the auricle is because a certain length of time is required for the impulse to travel from the auricular to the ventricular muscles. Now

in a case of this kind it is conceivable that some kind of a disturbance of the transmitting medium may exist by which the impulse is delayed in its passage, the transmission may be slower than normal, and as a consequence the contractions of the ventricle slower than those of the auricle, hence the bradycardia.

Dr. LAFLEUR said, in reply to a question asked by Dr. Mills, that his instructions were to take the temperature in the morning on arising; that at mid-day (whether this was done before or after the mid-day meal he was unable to say); and lastly in the evening after his dinner.

With regard to Dr. Adami's remarks about the rarity of finding a subnormal temperature in connection with bradycardia, this case is by no means in that respect an isolated case. The great majority of the cases summarised by Prentiss also showed subnormal temperatures. With regard to etiology he did not wish in any way to insist upon the mechanical idea as an explanation, but in some cases it seems conceivable that such may be, not the sole cause, but one of the causes.

Dr. WESLEY MILLS said that the reason he had asked the question, relative to the conditions under which temperature, etc., were taken, was that there might be no misapprehension by Dr. Lafleur with regard to subnormal temperatures. With the help of some of his present and past students he had recently been conducting some investigations on that subject, and found that if one takes temperatures a good deal, and takes them very frequently during the day, and of a good many different people, he will be surprised how often he gets below 97°, and also the number of people who have temperatures in that region at certain hours in the day. We have what are apparently subnormal temperatures existing as the normal condition of certain individuals, and that these individuals are by no means rare.

As regards the pulse, nearly every year some one comes to him and reports, either in himself or some acquaintance, a condition of bradycardia, so that like subnormal temperatures slow pulse is not so rare a phenomena as it was once thought; and that further its presence in an individual is compatible and concomitant with apparently good health.

Dr. Lafleur seemed to think that in venturing his suggestion as to a possible explanation in his case he was announcing a theory in direct opposition to his (Dr. Mills) views. He is not opposed to mechanical explanations as contributing factors. A few years ago mechanical explanations were the only ones; and it was as "sole causes" that he opposed them. In the present case, no doubt, the mechanical explanation is a link in the etiological chain, but it is only a link; and it only extends a certain length. Why should we rest content with the mechanical part of the explanation? A heart is a living thing composed of cells, which, while life is present, are continually subjected to a never ending and ever changing metabolism, and it is preposterous to explain the functioning of such an organ by hydraulics alone. Hydraulics may do for the larger arteries, but they are quite inadequate in the face of the complexity of the heart.

Blood pressure has to be taken into account in explaining the heart beat, as he has distinctly noticed, that in the fishes' heart, blood pressure had a great influence in the character of the beat. He referred to a case of a London physician, in whom the nervous system bore an important and clear relation to the rapidity of the beat. This man when working, found his pulse sink as low as forty. Then, of course, we must distinguish between these physiological and the pathological cases, so that bradycardia may mean very much, and it may mean but very little. There is a point brought out by the researches of Doctors Adami and Roy relative to the nutrition of the heart through the coronory arteries, and to some newly discovered nerves which regulate this nutrition, which he (Dr. Mills) would like to hear discussed at some future time.

Dr. Lafleur in replying had only to say that he alluded to the mechanical explanation of the problem not as any explanation of the work and results of Dr. Adami or his confrere, but solely with reference to those cases that had been reported lately, and which had been already mentioned. With regard to normal bradycardia, it is a phenomenon so well known that he did not think it worth mentioning; for instance, there is the oft spoken of case of Napoleon Bonaparte, the slowness of whose pulse has been a matter of historical

comment. In relation to the effects of study on the pulse, from observations on his own pulse, he was inclined to think that close study has a certain effect in reducing the rapidity of the heart beat, and in his student days, at the trying times of approaching examinations, he especially noticed were potent factors in bringing about such a phenomenon.

Remarks on a Recent Epidemic of Typhoid Fever in Montreal. —Dr. Wyatt Johnson said that a good deal of attention has been attracted to the considerable number of cases of typhoid which have arisen, during the last three months, among the customers of a well known milk dealer here. This epidemic, if it might be called such, is not very extensive, not very serious as regards the number of deaths, although the proportion of mortality is quite up to the average in typhoid (3 in 20) ; so that the loss of life has not been sufficient to attract very great attention from the public, and it might pass unnoticed, were it not that it has brought out very strikingly some defects of our present sanitary system, and the modus operandi of our local health office. The more you investigate the case, the more it shows a lack of co-operation and a lack of intelligent investigation of these infectious diseases; and of course, what applies to this particular outbreak would apply to the outbreak of any other infectious disease, more especially to cholera. We are informed by the greatest authorities that there is a high probability of cholera this year becoming generally epidemic in America ; and it behooves us, therefore, to be on the alert and see that no precaution is neglected which might spare us from the plague. Now, I think we are all agreed that the sanitary methods have greatly changed within the past few years, and that owing to better methods of research (especially as to infectious diseases) some form of laboratorical investigation is absolutely indispensible in any well equipped modern health office. It is possible of course to find out a great deal by examinations as to localities, and the run of cases ; but, at the same time, there is a certain degree of certainty and permanence furnished by laboratory experiments not found in any other way. The condition of the city is simply this. They never attempt to look for the germs of any infectious disease, they never in-

vestigate as to the locality and sanitary surroundings from which the milk is obtained. The milk is analyzed it is true, but only with a view to detecting gross adulterations and inferior quality, they are not in a position to do any more.

He called the attention of the society to this matter, in the hope that some of its members who have more experience than himself in health matters, will take some steps to bring about a more satisfactory state of affairs. The need of adopting some plan by which, when a case of infectious disease occurs in the city, the health authorities shall properly and scientifically investigate the same, is obvious in the light of our present knowledge of the etiology of these affections. At the present time the health department is much hampered in its work by the conflicting interest of the "powers that be." The city is rich, and they can afford to pay for the detection of contagious diseases. There are three special points in connection with this matter: (I) The health of the city is largely dependant on the health of the surrounding municipalities, and on this account he thought the business had better be done by the provincial board, whose jurisdiction would extend to these places. (II) Practitioners do not report their cases of typhoid as promptly as they should, and some apparently do not report them at all. Now it is very evident that unless practitioners reform in this respect, the efforts of any board of health to be thorough, will be of but little avail. They have no other way to find out suspicious cases, except through the doctors.

(II) The necessity of something being done in this respect within a reasonable space of time. As on our prompt and efficient organization will depend our prospect of being able to guard against cholera, the early recognition of cases affords the only chance of suppressing small outbreaks, and to recognize the disease early we must resort to bacteriological examination. The results of laboratorical investigation, are, as a rule, more satisfactory in the case of cholera than that of typhoid, because it can be done so much more speedily. With practice, cholera cases can be positively diagonized in the course of from 24 to 36 hours, and of course that is a great advantage. The Provincial Board of Health have, of late years, been trying to get this matter on a proper basis. The late Dr. R. L. MacDonnell, especially, tried to accomplish this pur-

purpose. It is thought that the society might join its voice to the demands of the Provincial Board of Health, passing resolutions, making suggestions that may seem proper, and in every possible way insisting upon the establishment of a laboratorical apartment at once for the bacteriological examination.

Dr. KIRKPATRICK stated that in the General Hospital in the winter of '90 and '91 an epidemic of typhoid occurred amongst the nurses and the employees. There were in all fourteen cases, five nurses, two cooks, a wardmaid, an orderly and a fireman. At the time of this outbreak the drainage system was found to be in remarkably good order, some slight defects found, however, were remedied. The milk supply was obtained from a man on the Longue Pointe road, who, it seems, was wont to purchase six or eight gallons daily to fill up the quantity required at the hospital, from a man on the same road, but nearer town. This latter milk was put into the kitchen for cooking purposes, a fact which was brought out by the subsequent investigation. An official examination was made of both places. The first place, that of the man who had the contract, was pronounced everything that could be desired, and no suspicion could be attached to it as the source of infection. Such, however, was not the case with the second place, that of the man who supplied the shortage in the required quantity. He was found to keep a dirty stable, cows in poor condition, cans under the same roof as the stable, and it was the custom to set them down on the dirty floor where the dogs were wont to run and gambol amongst them. The well was situated about 60 feet from the barn, and there was a strong suspicion that he obtained a good deal of his water from the river. Everything in the place contributed to fasten suspicion on this man's premises as the source of infection, and this suspicion was further confirmed later on in October by receiving a patient with typhoid who had been taking milk from this same individual. Yet owing to the imperfections in our methods of investigation we could do no more than suspect the real state of affairs. No positive proof could be adduced by the department whereby the guilt might be fastened on this man's place, and effort made to have him change his method of carrying on business.

Dr. J. C. CAMERON related a similar experience the profes-

sion had 15 or 16 years ago, and how futile were their efforts to get passed any remedial legislation. Although they succeeded in tracing some 30 cases to one milk supply, upon applying to the authorities to interfere in the matter, they were plainly told they were dealing with a large industry, one that involved a good deal of money, and unless there was a peremptory public demand behind them, one which was too powerful for them to ignore, they could not as public servants take on themselves to disturb it.

Now, it is possible for us to do more, we have now a provincial board which we had not then, but as regards the outlying municipalities, the city health authorities might easily do a great deal. They might make it necessary for country people to obtain a license before selling milk for city use, and only grant licenses to those who kept their quarters in good sanitary condition. The city can exclude milk from places that will not submit to periodical inspection, and by these and similar measures they might easily obtain a fair control over the city milk supply.

But we must not expect that we are going to obtain such results by the mere passing of a resolution, we have to fight against a large and influential industry, and to do so successfully, we must have some system in our mode of attack. We must be prepared to go before the public, and work them up to a good, wholesome sound feeling in this matter, and, especially with the cholera scare as a lever, we may get them to decide whether their lives or the vested interests of the milkmen are of the most importance. (I) Insist upon the refusal of licenses to all milkmen who are not ready and willing at all times to have their places inspected. (II) To have the provincial authorities take the matter up and appoint a specialist for the bacteriological examination of milk, etc., so as to ensure the early detection of contagious disease. This, roughly speaking, is the programme we should set before ourselves to obtain, and it would be well to appoint a special committee to undertake the executive of the steps required in this direction.

Dr. F. W. Campbell agreed with Dr. Cameron as to the difficulty of getting our legislators to move in such matters, unless a strong public opinion is first roused in that direction. At the epidemic referred to by Dr. Cameron our investigation

was very satisfactory, we discovered the source of the epidemic. He saw a difficulty in approaching the council on this matter, for he did not think we would get them to attach another hand to the Health Committee. Our only hope lies in the Provincial Board of Health. At the present time this is a very intelligent board.

The President then nominated the following committee to draw up resolutions embodying the views of the society: Drs. J. C. Cameron, F. W. Campbell, J. G. Adami, Wesley Mills and D. McEachran.

Stated Meeting, March 3rd, 1893.

E. P. LACHAPELLE, M.D., FIRST VICE-PRESIDENT, IN THE CHAIR.

Cor Bovinum; Cardiac Failure; Myocarditis; Infarct of Posterior Coronary; Sudden Death.—Dr. ADAMI brought before the Society a case of heart disease presenting certain unusual conditions.

The patient, A. H., aged 35 years, a powerfully built man, had been engaged at a brewery and had been accustomed to lift and carry about casks of great weight, and at the same time, after the manner of his kind, to consume large quantities of beer—for the last three years he had taken from five to eight quarts daily. In October, 1892, previous to which time he had enjoyed excellent health, he was seized with dyspnœa when at work, succeeded by palpitation and great weakness. He stopped off work for a week and on resuming the symptoms had disappeared completely. About December 15th, again while at work, a similar sudden attack of dyspnœa came on, and again he was obliged to discontinue. For two days he had almost continuous dyspnœa, and then palpitation and prostration supervened, with some œdema of the lower extremities, and he was forced to remain in bed. There he remained until January 26th, when feeling somewhat stronger he got up for the first time and walked to the General Hospital, where he was admitted under Dr. Stewart. There was a good family history, and the personal history revealed no previous rheumatism, syphilis, chorea or other disease predisposing to cardiac lesions. There was no complaint of palpitation while the patient was in the hospital; the pulse varied

from 68 to 100 and was irregular in volume and in rhythm; the arteries were thickened and not easily compressed. The apex beat was in the sixth interspace, $5\frac{3}{4}$ inches from mid-sternum and the vertical dulness began at the lower border of the third rib, the transverse began at the right edge of the sternum and extended $6\frac{3}{4}$ inches to the left. There were no murmurs to be heard. The urine contained no albumin on admission, but before death was loaded with it.

A diagnosis of myocarditis was made and the patient appeared to be improving slowly for a time, but for two weeks before death the dyspnœa became more severe and more frequent, finally becoming Cheyne-Stokes in character, and upon the morning of February 24th the patient died suddenly.

At the autopsy performed upon the following day there was found some anasarca of the lower extremities and slight œdema below the eyes. The lungs were greatly congested and œdematous, so that they only just floated; there were, as so frequently is the case in Montreal, evidences of old pleurisy. The liver was enlarged, fatty and congested; the mucous membrane of the stomach was also moderately congested; there were evidences of old peritonitis in the shape of adhesions. The kidneys were congested, the cortex enlarged and fatty, the capsules pealed off with some difficulty and the surface of the organs showed well-marked granular change; in both kidneys were several white infarcts surrounded by inflammatory zones.

The heart, however, showed the greatest departure from the normal. Upon opening the thorax it could be seen to be of great size. The apex lay $\frac{1}{2}$ inch outside the left nipple line and 2 inches below; the left lung was pushed upwards and outwards. The pericardial cavity contained more than 250 c.c. of fluid having a very faintly reddish tinge, but there was no recognizable sign of recent pericarditis, though there was a slight old and loose adhesion close to the apex of the left ventricle. All the cavities were greatly dilated, those of the right side contained fairly solid clot, those of the left a softer, more tarry coagulum. The heart weighed 690 grm., or just about three times the normal. It was a true "cor bovinum." There was no acute and but little evidence of chronic valvular disease. The pulmonary orifice measured 8.4 centimetres in

circumference, the aortic 7.5, and just above the orifice there was a little early fatty degeneration of the intima of the aorta; the segments of both pulmonary and aortic valves were normal. The tricuspid orifice admitted the tips of four fingers, the mitral those of three; and in connection with this last valve the papillary muscles were greatly hypertrophied, the chordæ somewhat short and thick, as were also the edges of the cusps. The endocardium of the ventricles presented no inflammatory change recognizable by the naked eye. The walls of all the cavities were hypertrophied; at the junction of the upper and middle third the myocardium of the left ventricle was 2.3 cm. across. The muscle substance could not be described as other than firm, but here and there it was perhaps a little paler than normal. Upon dissecting up the coronaries no endarteritis was found, but in one branch of the right coronary passing over the hinder wall of the left ventricle there was at the commencement of the lower third of the organ a red clot about half an inch long, and beneath this the myocardium was red and suffused with blood.

Unfortunately by mischance the heart and kidneys, having been taken from the post-mortem room to demonstrate to Dr. Stewart's clinic, did not reach the laboratory until twenty-four hours later, and then were in a condition far from satisfactory for study of finer details, so that I am unable to make any further statement than that the myocardium around the seat of the lesion of this coronary vessel was necrosed, that here and there were evidences of fatty degeneration in the heart muscle and that the fibres of the left ventricle were in general thin and smaller than normal. Some of the finer branches of the right coronary coursing on the surface of the left ventricle showed evidences of both acute and chronic endarteritis. There was no marked interstitial fibrosis, nor could any small celled infiltration be recognized.

This case, while presenting features which if relatively uncommon are capable of explanation, is beset with several difficulties. It is easy to find in the hæmorrhagic infarct of the left ventricle the cause of the sudden death. But what brought about the condition of this branch of the coronary vessel? The endocardium of the left side of the heart showed no lesion; the lungs presented no septic foci, they were simply

the congested lungs of heart failure. There is no origin to be found for any embolic mass which would at the same time explain the infarctous condition of the heart and the older infarcts of the kidneys, and this being the case I am led to hazard that both conditions originated *in situ*.

Turning for a moment to the general state of the heart, the hypertrophy, the great dilation and the cardiac weakness. Here, it seems to me, we have an interesting series of events which have led to the condition found at the autopsy. The patient had evidently been a most powerful man and had been accustomed to frequent great muscular exertion. This alone, as has repeatedly been seen in athletes, blacksmiths and others engaged for long continued periods in progressively advancing feats of physical strength, will lead to great hyertrophy of the heart, in fact, to the condition of "cor bovinum," and the organ may continue to do its work perfectly well for long periods under the great strain to which it is regularly subjected, although the tendency is often seen to be towards eventual failure. In this case we have to deal with sudden failure, and the explanation is not far to seek. Great exertion alone at times suffices to bring on what Latham has termed "heart shock," in which it would seem that the condition of over-strain and using up of the reserve force of the organ is followed by incomplete power of the organ to perform its normal functions subsequently under normal conditions—it has become dilated and cannot contract to the usual volume again, and with this there are all the signs of cardiac failure. But in a case like this before us, where the patient has been used to great exertion, something more, I think, has to be invoked to explain the suddenness of the failure, and that something is found in the excessive abuse of alcohol. As Professor Roy and I have shown experimentally, sudden or acute dilation of the heart may be brought about by injecting alcohol into the venous circulation, and as Dr. Graham Steell first pointed out to me, this condition of acute alcoholic dilation has been recognized clinically for some years, although it is not yet mentioned in the text-books. Given these two factors, physical exertion and the consumption of unlimited beer, acute dilatation may be safely prophesied as waiting upon hypertrophy.

In this condition we have all the elements requisite to set up a vicious cycle. When the heart muscle is in so enfeebled a state that, even when the patient is at rest, it cannot contract with each systole sufficiently to return the ventricle to its capacity in health, then the arterial blood pressure becomes lowered, the coronary circulation is weakened, the heart muscle fails to receive sufficient nutrition, it becomes further enfeebled—the heart becomes increasingly dilated. And it may be that in this case we have not to do with either infarct due to embolus or thrombus due to endocarditis of the coronary artery, though this latter is a not impossible explanation, but to rupture of the weakened vessel of a degenerated area at some moment of attempted increased cardiac exertion, and that to this rupture is due the infiltration of the muscle immediately surrounding the vessel, the coagulum that filled it, and the sudden death from disturbance of the functions of even a few fibres of the heart muscle. For here it would seem that, just as in Cohnheim's classical experiment, sudden death has been brought about by stoppage of the circulation through one small branch of the coronary artery.

Dr. Adami regretted that Dr. Stewart was not present to throw some light upon the clinical history of the case. Cases of myocarditis unaccompanied by pericarditis or endocarditis were very rare, and he was sorry that the condition of the organ prevented him from making an absolute statement as to whether there were clear signs of inflammation having preceded the degeneration met with in this specimen.

Dr. Lafleur had some knowledge of the case. The patient came to the out-door department complaining of shortness of breath and palpitation, which had been going on for several weeks. He had been in the Hospital before with an attack of the same nature, and was discharged sufficiently relieved to return to his occupation. He described himself as drinking to excess, and engaged in an occupation that entailed very heavy lifts. At the time a diagnosis was made of probable myocarditis; it was made from the facts that there was dilatation and hypertrophy, without anything to attract attention to valvular lesions, no organic murmur, no history of antecedent disease which might have given rise to such a condition. The condition of the heart found at the post-mortem

was particularly interesting; and he would like to ask Dr. Adami if the condition of commencing necrosis was strictly limited to the part about the supposed hæmorrhagic infarct, or whether it was generally spread throughout the muscular substance of the heart.

Dr. Adami, in answer to Dr. Lafleur, regretted to say that he could not be sure of the condition in various parts. While there was what might be partial necrosis in other parts of the heart, yet he could not arrive at an exact statement; and all that could be said was that the heart substance showed a certain amount of fatty change, a certain amount of degeneration.

Excision of the Tongue.—Dr. James Bell brought before the Society a case upon whom he had recently operated for the removal of the tongue. The whole tongue was removed on December 22nd by Whitehead's operation, which method consists in simply snipping the organ off with scissors. The patient was discharged on January 8th.

Dr. Bell related the history of another case, who, after operation, developed a mild pyæmia; and, although now fully recovered, was unfortunately not well enough to bring before the Society. An interesting feature, however, about this case was the mildness of the pyæmia. Twenty-four hours after operation he developed a slight swelling at the angle of the jaw, and later on swelling about the right trochanter.

Dr. Adami, exhibiting the specimens, said that both are well marked epithelioma. With regard to the second case, in addition to a perfectly typical epithelioma, it shows considerable infiltration and advancing condition into the surrounding muscle.

Removal of Pus Tube and Ovary with Adherent Vermiform Appendix.—Dr. Lapthorn Smith reported the following case: Mrs. S., age 35, married twelve years, no children, one miscarriage a year after marriage, since which she has never been well. She has had five attacks of pelvic peritonitis, which confined her to bed for several weeks each time. Her present attack came on one week before admission, when Dr. Reddy was called in and treated her with salines, with considerable benefit.

She entered the Hospital on the 2nd February, the temperature then being only 100.4°, but it fell to normal after a

few days of the same treatment, with the addition of hot douches. The principal symptom was pain in the right ovarian region of a sharp and burning nature, the same as she had always had with these attacks. During the past eleven years, every menstrual period has been followed by severe pain across the lower part of the abdomen, coming on only in the morning, but disappearing towards evening. She has suffered from constipation as long as she can remember, but she has never been troubled with her water an analysis, of which shows that it is normal.

By bi-manual palpation a hard swelling could be felt in the right inguinal region, which was firmly attached to the uterus about the region of the right cornu, and slightly movable with that organ. The induration extended all around the right half of the pelvis, but to a lesser degree; the whole of the swelling being very tender on pressure. The very hard mass was irregular in shape, consisting of several nodules, one of which was slightly fluctuating.

Diagnosis was made of pus tube and ovary matted together and bound down by old and recent pelvic peritonitis, the recurring attacks of which were probably due to leakage of pus from the tubes.

As no treatment would have been of any use unless it removed the source of the disease, namely, the pyo-salpinx, on the 25th February I performed coeliotomy, assisted by Drs. England and Geo. T. Ross, the patient being placed in Trendelenburg's posture. After the usual rigorous antiseptic precautions, the abdomen was opened by a four inch incision. The omentum was found to be adherent to the abdominal wall as high as the level of the superior spines of the ilium, but it was peeled off without great difficulty. The omentum was so firmly adherent to the pus tube that it was impossible to detach it; it was therefore tied in two segments and then *en masse*, and cut off. Great difficulty was experienced in enucleating the inflammatory mass from its bed of old adhesions, the process involving the rupture of the abscess cavity. From this about an ounce of ichorous fluid escaped, as well as about four ounces of straw-coloured liquid resembling urine, but which was found to have come from a portion of the peritoneal cavity walled off by adhesions. While enucleating, a

portion of the mass broke off, and on withdrawing it I found adherent to it a long, thin, healthy looking cord, which could be drawn six inches from the abdomen. This cord was cut and held temporarily with a Pean forceps, to be examined and dealt with later on. The main mass, consisting of the tube and ovary, were then dug out, bringing with it a portion of the uterine peritoneum. The above mentioned cord-like tube was then carefully examined; it was found to be round, perfectly cylindrical, that is to say the same diameter at both ends, its interior lined with mucous membrane, but without any peritoneal covering. As it is quite common to find the veriform appendix adherent to the right uterine appendages, I at once declared this to be the appendix, but on drawing firmly upon it, instead of being able to trace it towards the cœcum in the right inguinal region, it led directly up towards the right kidney, disappearing underneath the intestine, which was matted together. Some of the onlookers were convinced that this was the ureter. In order to mak sure that the bladder had not been torn, it was tested by the injection into it of a half-pint of boiled water, which did not come through into the abdomen, and which, on the contrary, flowed out of the natural channel unstained. The left tube and ovary appeared healthy, and were not removed. While examining them, several large lumps the size of pigeons' eggs were felt on the anterior wall of the rectum, beneath the peritoneum. One of them was lifted up to the incision and inspected, when it was seen to be yellow in color, resembling very much an enlarged cancerous lymphatic gland. The enlargement may, however, have been benign, and merely due to infection from the pus tube, although I have never seen anything like them before in this situation. The abdominal cavity was carefully washed out with four or five gallons of sterilized water, as hot as could be borne, which was paddled about among the intestines until it returned quite clean. The question now arose as to what was to be done with the cord which I believed to be appendix, but which was thought by several to be ureter. The patient was apparently in extremis, so that very little time could be spared in dealing with it. In case that it might possibly be the ureter, I thought the safest thing to do was to attach it to the lower angle of the incision, where if it were

the appendix, being healthy, it could do no harm, while if it should prove to be ureter it would avoid the destruction of the kidney by hydronephrosis. This was therefore done, and the abdomen was hastily closed with through and through silkworm gut sutures. When placed in bed her prospects were not encouraging, but she soon rallied under enemata of beef tea and brandy. There was considerable abdominal distension, but this was relieved by repeated enemata of sulphate of magnesia and glycerine.

During the first twenty-four hours nothing whatever was given by the mouth; during the second twenty-four hours only a few teaspoonfuls of hot water; during the third twenty-four hours she was allowed two quarts of hot water, and during the fourth twenty-four hours three pints of milk and lime water, and so on in increasing quantities. The drainage tube was removed at the end of the third day. The further history of the case was uneventful. I show here the chart of the temperature, pulse and respiration. The highest temperature recorded was 99 4-5°, and the highest pulse 99, both on the fourth day.

The pleasure of seeing this patient making such a good recovery after so severe an operation compensates me for the anxiety I felt in the presence of so much doubt, caused by the unusual length and direction of the appendix. If I had been sure that this cord was the appendix, and if the patient's condition had warranted me in prolonging the operation, I would probably have removed it; but the leaving of the rest of the appendix which was healthy has not in any way interfered with the result of the operation, which effected its purpose, namely, the removal of a neglected pus tube and ovary, which had long been a menace to the patient's life and a barrier to her comfort.

The specimen was referred to Dr. Adami for a report upon its nature.

Two Cases of Appendicitis.—Dr. Bell showed two specimens which he had removed during the last ten days. One of these in itself answers a good many of Dr. Lapthorn Smith's questions. The largest part is the apex, and the smallest that nearest the cæcum. The apex was near the liver, and as he pulled it out he thought that he was pulling something won-

derfully long. It was near the apex that it was diseased, so he was not particular about removing it close to the cæcum. It was removed for recurrent attacks of appendicitis. The first attack was one year ago last January, another attack in November last, and a series of attacks since then, never fully recovering from any of them and lasting until Wednesday week, when he was operated upon. It was clearly one of those cases of catarrhal appendicitis. The patient at first declined operation, and it was not urged. He went away, but being unable to work returned with a sausage-like mass in the line of the ascending colon. There was no pus, nothing but adhesions, which made it difficult to separate the swollen point of the appendix.

The other specimen was removed last night at 10 o'clock. It shows a gangrenous appendix. It is one of the earliest operations he had any knowledge of. The patient went to his work on Wednesday morning; some time during the morning was attacked with a pain in his side, but worked all day. He sent for a doctor during the night and was operated upon before 10 p.m. the following night—within 36 hours from the time of his first symptoms, and 24 hours after leaving his work. The middle portion of the appendix was quite gangrenous, but there was no pus about it. it was the separation of the adhesions that caused the gangrenous portion to give way. It lay curled up behind the ascending colon and was gangrenous in its middle portion. No concretions were found.

Both patients are doing well, but the patient from whom the first was removed contracted a pneumonia, from which he has recovered.

Dr. J. Alex. Hutchison said that he had assisted Dr. Armstrong in an operation for appendicitis that was almost, if not quite, as early as Dr. Bell's second case. The first symptoms were on a Friday morning, and the operation was performed on Sunday at 7 a.m. A gangrenous section was removed, and the man died three hours afterwards.

Rapidly Growing Ovarian Cyst.—Dr. Wm. Gardner gave the following history: The patient, a woman between 40 and 50 years, some time past the menopause, had suffered from enlargement of the abdomen and pain for a year or so. The peritoneal cavity obviously contained fluid. The hand easily de-

tected a very movable firm tumour easily recognizable as independent of the uterus. At the operation peritoneal fluid escaped, and the tumour was delivered with very little difficulty. The interest of the case is that it is a multilocular growth, of the nature of which Dr. Adami will tell us. It was at once obvious that the large anterior cyst had ruptured, and the fluid had escaped into the abdominal cavity. There was an attempt to repair on the part of the cyst, and parts of the edges were atheromatous. There was also a patch of adventitious membrane around this region. What excited his suspicion was the fact, which was insisted upon by the patient, of frequent variations in the size of the abdomen. The course of recovery was perfectly smooth.

Dr. Adami briefly described the tumour as a rapidly growing ovarian cyst. It varied in its density in various regions. There is a large anterior cyst which had burst. Besides this there is one region that contains a large number of completely recognizable cysts lined by epithelium with mucoid contents, and another region in which there are much smaller cysts recognized by the microscope, and which is a much more solid portion. It is characteristic of the multilocular ovarian cyst in its various appearances. There is not much evidence of papillomatous growth into the cyst cavities.

Masked Tuberculosis.—Dr. W. S. Morrow read the following paper on this subject:—

You have heard of the old man Proteus, of Grecian fable, whose sport it was to assume a multitude of strange disguises in order to elude the search of those who would fain question him about the future. You have smiled as you have thought of the credulity of the ancients who could believe in such a thing; and yet to-night I wish to discuss with you an entity—if I may call it such—a morbid process, if you prefer the term, which, for endless variety of disguises, puts the old man to shame, and in some of its less customary garbs deceives, not superstitious Greeks, but members of our own learned profession.

I refer to tuberculosis and invite your attention while I try to set before you a few cases, which seemed to me from one cause or another to present special difficulties of diagnosis.

From the fact, however, that certain general laws apply more

or less to all diseases, and that while we are making our diagnosis we are necessarily in doubt as to the nature of the case, it follows that the propositions I try to illustrate regarding the diagnosis of tuberculosis may be extended to apply to many other morbid processes, and you will no doubt recall cases of other diseases which have presented to you the same difficulties of diagnosis as I have met with in tuberculosis.

The first point I would like to make is: that we sometimes find certain symptoms, not closely connected with tubercle and to us not characteristic of it, so prominent as to draw us away on a wrong scent and lead us to seek the cause in a wrong direction.

Thus in February, 1892, D. R was admitted into the general hospital. He complained of frequent emissions sometimes occurring more than once a night, of pain over the sacrum, of weakness, of sweating at night, of slight cough, and scanty thick expectoration. Family history, tainted with tuberculosis; personal history of dissipation.

On examination of his lungs no physical signs of disease were observed. The cough of which he complained was only a slight hawking, such as is characteristic of pharangeal catarrh. The sweating was never found to amount to much by the nurse. His temperature was normal; disposition nervous and cranky. A diagnosis was made of neurasthenia and functional spermatorrhœa, and yet I believe the man was already suffering from tubercular orchitis as the sequel proved.

After he had been in hospital a little while, I noticed his left testicle slightly larger than his right, but, as there was no tenderness and both were small, I supposed the right was atrophied. His temperature soon after became irregular and he developed signs of phthisis. My term being up I left the hospital but heard afterwards that he died of miliary tuberculosis. At the post mortem the apparent origin of the tuberculosis was found in the left epididymus, which was caseous and apparently showed the changes of longest standing.

This case shows how insidious tubercle may be in the testicle, causing in this case very little enlargement at first, no pain or

tenderness, in fact scarcely any sign of localising value except the spermatorrhœa, which is itself often, if not most often, a symptom of psychic disturbance.

However, this man's history is a warning to us to examine carefully the genital organs of patients with persistent spermatorrhœa.

There was a another case admitted about the same time which likewise shows how one may be misled by the prominence of symptoms not usually connected with tubercle.

P. M. was admitted into the hospital February 3rd, 1892, complaining of pain about the right shoulder and loss of power in the muscles moving that joint. A fortnight before admission he was suddenly seized with pain and weakness in the right arm and shoulder while cutting wood. This got steadily worse.

When seen he was unable to bend his right elbow or shoulder without help from the other hand, and then not without pain. All the muscles acting on the shoulder joint were much wasted. Their reaction to Faradism was diminished.

A diagnosis was made of neuritis perhaps associated with a polio-myelitis. When the man had been under observation for about a month an abscess formed on the outer side of the arm at the junction of the upper and middle thirds. It was opened and after this some increase in power was observed, and he went home ten days later with the abscess apparently nearly closed and the condition of the muscles improving.

Five months afterwards he came back. That abscess had never closed. The patient was dying of phthisis and succumbed three days after admission. At the post mortem, besides the tuberculosis in the lungs, the right shoulder joint was found to be the seat of caries, which was doubtless tubercular. The sinus at the seat of the old abscess cavity connected with the joint.

In this case the excessive wasting of the shoulder muscles, the change in Faradic irritability, the pain, and the history of sudden onset directed attention to the nerves.

When the abscess appeared, the evidence of neuritis seemed so strong, and the abscess pointed so far from the joint, that I

was led to explain it by trophic changes acting along with a poor state of general health and a possible slight injury, whereas there is little doubt but that the disease started as a tubercular arthritis of the shoulder, and if there were changes in the nerves they were secondary.

We may very easily be misled by the history of a case into ascribing to traumatic or other causes symptoms really due to tubercle.

Thus Fagge relates the case of a man who received a severe crushing injury to his chest, after which he spat up a little blood. A few days later he had a considerable hæmoptysis. Although physical signs were soon after found suggesting a tuberculosis, they seemed explainable by traumatism, and thus the diagnosis was delayed. A few months later the man died of tubercular phthisis.

Sometimes, again, although the appearance of the patient and the history of the case suggest tuberculosis, we are unable to satisfy ourselves of the nature of the case from lack of physical signs. The following is a remarkable case of advanced tubercular disease without any physical signs which I could discover.

D. McD. came to the general hospital on November 18th, 1891, complaining of weakness, loss of flesh, and most obstinate constipation. His family history was both neurotic and tubercular. His back was injured six years before admission, and had never been strong since. For a year he had been losing strength and flesh rapidly. There was no history of cough or night sweats. He was tall and gaunt; greatly emaciated; muscles limp and weak; deep reflexes absent; bowels never moved without assistance; temperature sub-normal, pulse 52; no physical signs of disease found in thoracic or abdominal viscera. A week after admission he developed a moderate cough, but still no physical signs of disease could be found in his lungs. Four days later the sputum looked so purulent that it was examined and found teeming with bacilli. This was a week from the onset of cough. The only physical sign which could be found even then was a slight lack of resonance in the

left interscapular region. No change in the character of the breathing could be made out, and no rales were heard. Five days later the patient died quietly at night without anything unusual being noticed about him except increased weakness.

Unfortunately the friends objected to a post mortem, so that it is not possible to unravel the mystery surrounding this case. The only explanation I can suggest of the sudden onset of cough accompanied by tuberculous sputum is the rupture of some tuberculous focus, such as a caseous gland, into one of his bronchial tubes; and I think the character of the sputum, so creamy in appearance, and the position of what physical signs there were in the interscapular region, went to support this view. Besides, this course of events is, I believe, not without precedent, especially in children, who have been known to cough up not only caseous products of broken down glands, but the glands themselves.

What caused the emaciation? What caused the obstinate constipation? I have never been able to answer either of these questions to my own satisfaction.

But passing on:—We may be deceived by the presence of other diseases along with the tuberculosis.

In November, 1891, a young woman named Annie L—— was brought to the hospital in an early stage of miliary tuberculosis, but at the time she was also suffering from tonsillitis, which seemed to be sufficient explanation for most of her symptoms and, I think, delayed the diagnosis of the tuberculosis.

We are doubtless all agreed that some cases of tuberculosis are difficult to recognise. The question now presents itself: What steps are we to take if we are to unmask and diagnose the greatest possible proportion of obscure tubercular cases? By observation, thought, and especially by attention to details, we may do much.

We may learn to recognise more quickly and surely the two great types of tuberculosis and scrofula, as laid down by Jenner in his classical description. On the one hand, the precocious development, slim figure, delicate skin, clear complexion, bright eyes and silky hair. On the other hand, the phlegmatic disposi-

tion, dull pasty complexion, thick lips and enlarged glands. We must not, however, expect all our tubercular cases to bear their constitution written on their faces thus clearly.

Fagge attaches importance to straight, lanky whiskers and beard. He says: "A bright eye, and a flushed cheek, associated with a wasted frame and lanky hair, at once suggest tubercular mischief."

In his chapter on constitutional diseases, Paget mentions among other signs of scrofula which sometimes assist us: "Granular pharynx, soft enlarged tonsils, swollen catarrhal nasal passages, chronic periosteal swellings, slowness of healing, capricious appetite, and excessive growth of dark hair on trunk and limbs."

He makes the remark: "Many small facts may be as significant as a few large ones; the accumulative evidence of probabilities of low degree may amount to proof."

The important diagnostic value of physical signs, and family and personal history, I can only mention.

Koch's lymph has come, and has it gone? It seems to me, from indications I occasionally see in the journals, that it may yet have a recognised place in diagnosis if not in treatment.

There is one more aid to diagnosis I should like to mention, and that is the cherry red colour given by Ehrlich's diazzo solution with certain specimens of urine. I have found this reaction in the urine of miliary tuberculosis, pulmonary phthisis, tubercular cystitis, and tubercular peritonitis. I believe it is usually present where absorption of tuberculous products is going on to any extent; and although the diseases in which it may be found are not yet completely worked out, there are certainly not many in which it is so typical as in tuberculosis and typhoid; and I believe we may often get valuable information by the employment of the test in these diseases.

I should like to bring to your notice, in closing, a few points mentioned by Sir William Savory at a recent meeting of the North London Medical and Chirurgical Society. He observed: "That each of the symptoms which presented themselves in any given case, was to be observed not so much in its absolute

value as in its relative significance. The true meaning of any physical sign was to be reached, not by considering it alone, but by viewing it in relation to the rest; and by thus placing each in its proper relative proportion, and by taking measure of the proportion of each, to form a mental picture of the actual state of things."

He also insisted on the importance of observing all symptoms: "Signs neither usual nor prominent might materially modify, or altogether change the view taken." Again, "an enquiry might be full and complete, and yet the result confused or obscure from an absence of all proportion."

He mentioned the dangers of "a too exclusive devotion of attention to a particular part or subject."

What the rules of perspective are to the artist, this sound judgment of the relative proportion of symptoms is in diagnosis.

Discussion.

Dr. Blackader said that there was one fact that Dr. Morrow did not bring out, that is the association of anæmia with tuberculosis. This was pointed out in a very careful paper read last year by Dr. Richford at Cincinnati. In a great number of careful enquiries among a large number of children, characterized by pallor and anæmia, with lessening of the number of red blood corpuscles, he found that in the great majority this condition was associated with tuberculosis in the family. More than that, in a number of members of the same family quite a number might die of phthisis, yet one or two members of the family would be exposed all the time and they would not contract it, yet they were looking pallid, anæmic, with evidence of what one would suppose might constitute them fit subjects for the disease. How was this? How is it that they resisted the invasion of tuberculosis? It was suggested that there was a certain amount of tubercular condition of the internal glands, which to a certain extent afforded immunity for the time being from tubercular affection in the pulmonary organs. How far this answer is correct is very uncertain, yet it appears worthy of consideration.

Dr. F. W. Campbell said that he knew of no subject to-day so full of interest as tuberculosis. It is unfortunately an exceedingly common disease, and it is a good thing now that we

have recognized the fact of its being a contagious disease. He pointed out that the great majority of tubercular people carry in their faces the signs of tuberculosis. Another point is the extraordinary prevalence of tuberculosis after accouchments. Those who have very large experience with life insurance will be able to appreciate this fact. When you get a history on a life insurance paper of one, two or more members having died in accouchment, an investigation will often reveal that these sudden deaths were due to tuberculosis, and this in spite of the absence of any trace of tuberculosis in the family.

Dr. LAFLEUR was pleased that Dr. Morrow had mentioned the Ehrlich's reaction of the urine. There is a general impression that it refers solely to typhoid. It had been his experience that it is very apt to be found in tubercular cases. There is one other little point in the paraphernalia of diagnosis that might have been touched upon, viz., the examination of the blood. In those cases where there are chills it is extremely important to exclude malaria by an examination of the blood. In tuberculosis the examination will show one thing very constantly, viz., increase of the white corpuscles. This is said not to occur in typhoid fever, and therefore it might serve to separate a case from that disease.

Dr. WM. GARDNER said that his experience in abdominal surgery bears out to some extent the points mentioned by Dr. Morrow. When one has not much experience, and sometimes when one has a great deal of experience, he will open the abdomen for something else and find tuberculosis; with increased experience he would be more ready to suspect such a condition, and one should always have in mind the possibility of tuberculosis.

Dr. H. S. BIRKETT very frequently has cases referred to him where the only symptom is a slight cough, and where the physician in attendance is quite sure there is no sign in the chest to account for it; yet these cases often afterwards develop the physical signs of pulmonary tuberculosis. Such cases may often be diagnosed at the very outset by an examination of the throat. The pharynx viewed under a bright light, something brighter than sunlight, will be seen to be quite anæmic, and it is found from experience that this

marked anæma of the pharynx is often the only indication of an incipient phthisis.

Dr. J. B. McConnell asked if Dr. Morrow had examined the intensity of the heart sounds as an indication of disease of the lungs. He has noticed that in cases where the lungs gave no clue to the cause of the trouble an accentuation of the second pulmonary sound may be detected, and this should often lead us to suspect pulmonary tuberculosis where there were no other symptoms.

Dr. Kirkpatrick related the history of a child eight years of age. There was a suppurating gland in the groin which was to have been scraped out. The operation was postponed for a few days. In the meantime resolution set in and the abscess disappeared. Very shortly afterwards tubercular meningitis set it, and the child died in about two weeks. Probably had the absess been dealt with antiseptically in the first instance, as was intended, the child's life might have been saved.

Dr. Morrow, in answer to Dr. McConnell, said that he had no record of the nature of the pulmonary second sound in the cases he had reported.

Report of the Committee on Infectious Diseases.—Dr. J. C. Cameron read the report, as follows :—

Infectious disease is preventable disease, whether the mode of infection be direct—from person to person—or whether it be indirect through the agency of water, soil or clothing. As such it ought to be prevented. It is for us and for the community at large to use every endeavour towards that end.

Granted that we can recognize surely the nature of a given infectious malady at a sufficiently early date, we can then stay that malady from spreading so as to affect other individuals, we can prevent it from assuming an epidemic character.

Thanks to the bacteriological discoveries of late years, we now possess this power of early diagnosis in connection with not a few of the most important—that is to say. the most widespread and fatal of infectious disorders. We can demonstrate the minute organisms which are the cause of such diseases as tuberculosis (phthisis), typhoid, diphtheria and cholera.

With respect to typhoid, the infection has long been known to be indirect, but now we can determine the presence of the specific bacillus of this disease in the intestinal contents of those suffering from the disease; we can trace its presence in the excreta and in water which has become contaminated by the leakage into it of the sewage of an affected locality, and from this water can trace its passage into milk and other fluids that have been placed in vessels washed in water.

So, too, with respect to cholera. Here also the infectious agent passes often with the excrementitous matter into the water supply of a large area, it may be, and thereby the disease becomes widespread. In this water, as in the intestinal contents, the presence of the minute organisms associated with the disease may be demonstrated. If, then, with any of the above-mentioned diseases the nature of a solitary case be recognized, we can prevent the extension of the disease to others by isolation of the patient, and by rigorous disinfection of excreta, clothing, and of the sick chamber and its attendants. The case will remain isolated.

It is evident, therefore, that the early diagnosis of infectious diseases is of the highest importance to the community.

The more perfect the system whereby each case of infectious disease is promptly notified, and any doubtful isolated cases subjected to careful bacteriological investigation, the greater the security of the community at large, the less the death-roll.

In Montreal, as in every large centre of population, it is necessary in the first place that there be compulsory notification of infectious disease to the central authority—namely, the Medical Health Officer,—and, in the second place, that there be a competent bacteriologist to control the clinical diagnosis of doubtful cases, and to trace bacteriologically the channel by which a given disease has spread from one individual to another.

Taking first the subject of compulsory notification, your Special Committee has learned, with regret, that not a few practitioners of this city have evaded their duties in this respect, and, instead of helping, have thwarted, however unintentionally, the efforts of the Medical Health Officer. At the same time your committee would call attention to the fact

that, with his office undermanned, it is impossible for the Health Officer to perform his duties satisfactorily. A staff of assistants is urgently required, whose duties it would be to gain particulars connected with each case notified—duties which one individual, however willing, clearly cannot perform—duties which unperformed render notification of little avail.

Nevertheless, had each case at the commencement of the recent outbreak of typhoid in our midst been properly notified, the necessity for action in connection therewith would long ago have been discovered.

In the second place, the fact that bacteriology is a very special new branch of medical education, requiring not only special training, but also special laboratory appliances, renders it impossible for the ordinary practitioner satisfactorily to undertake the bacteriological diagnosis of disease. It is therefore necessary that there should be attached to the Health Office a bacteriological laboratory in the charge of a well-trained observer.

Your Special Committee has taken into consideration the question as to whether the bacteriologist and his laboratory should preferably be in connection with the Provincial Board of Health, or with the City Health Office. They hold that while, in view of the very possible invasion of this Dominion by cholera this forthcoming summer, it is undoubtedly of the highest importance that the Province be provided with a competent bacteriological adviser, whose duty it would be to determine the nature of every doubtful case of choleraic diarrhœa, and to advise with regard to effectual disinfection of immigrants and their belongings; nevertheless, since their present mission is to report upon matters concerning Montreal and its immediate neighbourhood, they must advise that a skilled bacteriologist be attached to the City Health Office. They do this with confidence, in the assurance that the larger question may safely be left to the Provincial Board of Health and its very capable head.

Against the possible objection that Montreal and its officials have no authority over those outside the city's boundaries, they would urge that though they have no direct authority, yet their indirect authority is such that they can become

masters of the situation. They can certainly control the city's water supply; and with regard to another potent source of infection, namely, the milk supply, it is in their power to add to the conditions attached to the milk licenses a proviso that such licenses be only granted upon the condition that the city authorities reserve the right to obtain samples of the milk for examination wherever and whenever it seems fit to them, and to peremptorily rescind such licenses permitting the sale of milk within the city boundaries, if it be found that the condition of the stables and dairies is such as to constitute a danger to public health.

A city by-law to this effect is already in existence, but your committee learns that it is rarely acted upon. Your committee is strongly impressed by the necessity for more thorough milk inspection. More is wanted than occasional examination to determine whether milk has been dilated or has been deprived of its fats. No article of food forms a better field for the growth of micro-organisms than milk; and the presence and growth in this fluid of filth bacteria in consequence of imperfect cleansing of utensils, or mixing the milk of different days, of undue care in carriage, appear to your committee amply sufficient to explain a large proportion of the cases of cholera infantum or cholerine which here in Montreal assnmes each summer so alarming and fatal a character. Thus the city has the power to regulate the milk supply, and in this and similar ways is capable of controlling the surrounding districts.

Your committee recognize that for the hygienic laboratory attached to the Health Office to be complete a chemical department presided over by a competent organic-chemist is a *sine qua non*. They fear, however, to urge this matter too strongly at the present moment, believing it wiser to demonstrate the necessity of one reform, in the hope that this may be the means of leading to others in the not distant future.

Your committee would therefore submit to the Society the following resolutions:

1. That for the maintenance of public health and to prevent the spread of infetious disease, this Society emphatically endorses the city regulations which demand that practitioners report each and every case of infectious disease occurring in their clientele.

2. That in the opinion of this Society the staff of the Medical Health Officer should be increased in order that the spread of infectious disease be traced and its further advance hindered.

3. That this Society urgently requests the authorities of the city of Montaeal to appoint a skilled bacteriologist upon the staff of the Health Office, whose duties shall be to investigate the origin and spread of infectious disease within the city in accordance with the resources of modern hygiene and modern medicine, and to advise the office upon the measures to be taken in order to eradicate such disease or to stay its further progress.

James Stewart.	J. C. Cameron.
J. G. Adami.	Wesley Mills.
D. McEachran.	F. W. Campbell.

Continuing, Dr. Cameron said that the course recommended by the Committee was, if the report was adopted, that a deputation wait on the Mayor, who is thoroughly with us in this matter, and he will introduce the deputation to the Council, and the report will be presented. After this it is proposed to print the report and publish it through all possible channels, in order that public opinion may be awakened to the importance of the subject.

Dr. Lachapelle, before putting the question, desired to say that he quite agreed with every part of this report, and that as a sanitarian he was glad to see this Society so actively alive to the interests of the public health. He wished that all physicians were actuated by the same public spirit, especially as to the reporting of cases of contagious disease, and this, he regretted to say, is not always done. If the Provincial or any other Board of Health is to do anything they must have the information, the physicians must report their cases. Of course there are some prejudices against the practice, but the physician who knows better should not pander to them at the public cost. Moreover, if everyone reported his cases there would be no trouble; it would take but a very short time for the public to be reconciled to the inevitable, and everything would then run smoothly. So far as the appointment of a properly qualified person for bacteriological ex-

amination as an aid to diagnosis is concerned, he said that the Provincial Board of Health is fully aware of the importance of that step, and is willing and is now specially working to obtain from the Government the authority, the money, and especially the room for the establishment of such a laboratory. He said, further, that the Government seems very well disposed to do their duty in this respect.

The report was adopted, and the Vice-President requested the same committee to act as a deputation to the City Council.

Stated Meeting, March 17th, 1893.

James Stewart, M.D., President, in the Chair.

E. C. Feilde, M.D., of Prescott, was elected an ordinary member.

Dystocia Due to Hydrocephalus.—Dr. D. J. Evans read, for Dr. Schmidt and himself, the following report of the case, and exhibited the specimen:—

Mrs. B., aged 42, IX. para. General health has always been good. Married at 30 years of age. Previous pregnancies normal, with exception of last, which terminated in the seventh month. Labours easy. No abortions. No specific history on either side. Husband somewhat addicted to alcohol. Very early in present pregnancy the patient assisted a friend at her confinement, and was much startled at seeing the head of the child born. She gives this as a possible cause of the condition of her child's head in this instance. Patient, as she approached term, noticed herself to be far larger than she had ever been before, but suffered very little inconvenience otherwise. Labour pains began about 7 p.m., March 10th, 1893. Her physician reached her at 7.30 p.m., and states he found her enormously distended. Pains were frequent and strong. Diagnosed breech presentation. Membranes ruptured about 9 p.m., and a tremendous quantity of water flowed away. The body of the child was born without difficulty about 10.30 p.m. The cord was pulsating, so the physician endeavoured to disengage the head as quickly as possible. No pains being now present, ℥iii. tr. ergotæ were given within an hour. He attempted to apply the forceps, but without success; so he

summoned assistance. I reached the case about midnight, and found the child born all but the head. The dystocia had been diagnosed as due to hydrocephalus. This I was able to establish by external palpation, the fluctuating sutures and the edges of the parital bones being easily distinguished. With the concurrence of my colleagues, I then adopted Tarnier's procedure. The vertebral canal of the child was opened in the dorsal region, and a No. 7 gum elastic catheter introduced through it into the cerebral cavity, and a large quantity of serum drained away. As soon as possible the head was drawn down and an opening made behind the left ear, which permitted a large quantity of fluid to rapidly escape, and the head was then easily delivered. The afterbirth was expressed in about twenty minutes, without difficulty, and came away entire. A uterine douch of hot creoline solution (℥i. to Oi.) was then given, and after the patient had been cleaned, a little pulv. iodoform was dusted over the vulva and a vulvar pad and a binder applied. On the fourth day the temperature was 99 1-5°, so a vaginal douch was given, which brought it back to normal, where it has remained since.

The measurements of the child's head are as follows :—

Circumferences.—	O.F. 66	c.m.
	O.B. 67.4	"
Diameters.—	B.P. 21.0	"
	O.F. 20.1	"
	Sub. O.B. 19.8	"
Length of Body.—	67.4	"

Intra-uterine hydrocephalus is a very rare condition, occurring only once in 3,000 cases. Mdme. Lachapelle records only 15 in 43,555 births.

Hydrocephalus is due to the abnormal collection of serum in the lateral ventricles, which latter may become enormously distended, causing the cranial bones to become thinned and softened and the sutures widely dilated. The condition has been attributed to syphilis, alcohol, cretinism and consanguinity. The mothers are, as a rule, past forty years of age. Hydramnios is frequent in these cases. The fœti are frequently the subjects of spina bifida and talipes equinus as well.

Spontaneous delivery only occurs in mild cases or where the fluid escapes into the subcutaneous tissue or into the pleural or peritoneal cavities of the child.

Diagnosis.—The diagnosis is not difficult in these cases, if abdominal palpation is carried out systematically. This is the second case I have been enabled to diagnose by this means. The first case I saw in the Clinic Baudelocque, under Pinard's care, in Paris. The large size of the head, the difficulty with which it can be pressed down into the pelvis where the latter is normal (Eindruckbarkeit, as the Germans call this procedure), the fluctuating sensation of the fontaneles and sutures, are all points to aid in diagnosis by palpation. In fat women, where this condition is suspected, the whole hand must be introduced into the uterus, if necessary, to complete the diagnosis.

Prognosis.—For the Child.—Chassainat's records show that in 60 cases of hydrocephalus, 41 died before or during labour. Only 4 out of 19 born alive lived for several years. Paullet, after diligent search, failed to find the record of a single case that, having caused dystocia, lived *For the Mother.*—The great danger is rupture of the uterus. Kieller, of Edinburgh, records that in 74 cases rupture occurred 16 times. Charpentier stated that 17.79 per cent. of these cases die from uterine tearing. Paullet records that in 106 cases 21 mothers died.

Treatment.—As soon as diagnosis is established and dystocia threatens, in vertex cases, perforate with a trocar and drain off the fluid. In breech cases, which occur frequently in this condition (one in every five cases), the proceeding I adopted in this case, which was first employed by Tarnier in 1860, recommends itself by its simplicity, its effectiveness and its lack of danger to the mother.

The forceps are more than useless in this condition, as a hold cannot be obtained, and they are very apt to injure the soft parts by slipping.

A Case of Pernicious Anæmia.—Dr. Adami read the history of the case, as follows:—It is far from my intention to-night to detail fully the various points of interest in connection with the case of pernicious anæmia that I bring before you

now; but it is necessary that I should recount the broad outlines of the history of the disease in the patient, and of the conditions found at the autopsy.

The patient, A. H. C., aged 52, was admitted into the General Hospital upon February 8th, 1893, under Dr. Stewart. In March, 1892, the patient noticed his increasing weakness. This was accompanied by numbness and tingling of the feet and slight swelling of the lower extremities. With this there was increasing pallor, and he entered the Montreal General Hospital in August of last year, the diagnosis then given being pernicious anæmia. However, during the five weeks of his stay the patient improved in health to such an extent that some doubt was felt as to the correctness of the diagnosis; but even upon leaving the Hospital, in September, the number of red corpuscles per cubic millimeter was only 2,365,000. The patient neglected treatment after his departure, and after a few weeks fell back again in health.

On re-admission, in February, the number of the red corpuscles had sunk to 700,000; the percentage of hæmoglobin had fallen to nothing like the same extent, there being an actual increase of 23 per cent. per corpuscle. The patient now was very prostrate, and the progressive asthenia ended in death upon Feb. 21st. There had never been any hæmorrhage or diarrhœa, and vomiting only occurred twice, and on both occasions after taking arsenic. There was a soft blowing systolic apex murmur; the heart sounds, however, were strong.

At the autopsy, which was performed a very few hours after death, the cardinal appearances of pernicious anæmia were made out. There was the typical canary colour of the skin, and the persistence of subcutaneous fat in fair quantity, despite the extreme anæmia. The liver was rather enlarged, and of a more reddish or orange tinge than usual. The kidneys enlarged, pale and friable. The walls of the stomach were somewhat thinned and pale, while the bladder was distended, containing considerably over 500 cc. of dark, amber-coloured urine. The pancreas was firm and normal. The stomach was free from any ulceration or malignant growth, and the only noticeable point with regard the alimentary canal in general was its anæmic condition and the thinness of its walls, but the thinness was not extreme. The lungs were anæmic, but other-

wise normal. There was an increase in reddish-purple bone marrow in the sternum and lower vertebræ. The condition of the heart was worthy of note. All the cavities were in a state of extreme dilatation. The right auricle was filled partly with a thin fluid blood and partly with a soft clot. From this cavity more than 300 cc. of the fluid blood was removed for future examination. The aortic and pulmonary valves were competent; the tricuspid and the mitral somewhat thickened at the edges, the latter the more so.

Portions of the spinal cord were removed, but are not as yet sufficiently hardened to be examined microscopically. This was done in view of the recent observations that have been made regarding certain changes in the cord in connection with pernicious anæmia. Some blood taken from the heart was submitted to Dr. Ruttan for chemical analysis. In this case an analysis of the serum has been made for the first time in pernicious anæmia, and it is interesting to note that the proteids of the plasma have been altered in their relative proportions.

Chemical Analysis of the Blood Serum, by Dr. Ruttan.— The clear, almost colourless serum from this case of pernicious anæmia had a specific gravity of 1026.1, and carried only 5.2 per cent. of proteids by weight. These proteids consisted of 2.3 per cent. of globulins, precipitated by saturating with magnesium sulphate, and 2.9 per cent. of serum albumen proper. There was 0.875 per cent of ash. It will thus be seen that not only are the total proteids reduced about 40 per cent. below the average normal quantity, but the normal ratio of the globulin to serum albumen is considerably altered. The ash is also about 20 per cent. above normal.

Determination of the Iron Contained in the Liver Tissue.— The total quantity of iron found in the liver was 0.2423 per cent. by weight, calculated to the fresh undried tissue. This was found to be equivalent to about 0.72 per cent. to the dried tissue.

In connection with these analyses, I would point out the fact that we have here very evidently a considerable change in the blood serum going hand and hand with the change in the red corpuscles. If this case can be taken as typical (which certainly it was in its progress, although the distended

condition of the heart at the autopsy was unusual), then we learn that in this disease the serum becomes much thinner, containing more than one-third less proteids, and that in this diminution of the proteid constituents the serum albumen sinks rather more than does the globulin, for in 100 parts of normal blood there are 8 or 9 parts of proteid, and of these 3 to 4 consist of globulins, the rest being serum albumen. With reference to the iron in the liver, I may say that normal dried liver tissue, freed from blood, contains about 0.1 per cent. of iron. Here we have seven times that amount. This is in keeping with the results of Quincke and others, who in advanced cases of this disease found 0.6 to 1.0 per cent. present.

Dr. Blackader wished to know if there is any record of the results of the microscopical examination of the blood during the patient's stay in the Hospital.

The President, in answer to Dr. Blackader, said that the usual changes had been present and observed. Arsenic had at first a marked beneficial effect. When admitted in August, a diagnosis of pernicious anæmia had been made from the man's appearance, examinations of blood, etc. He was put on arsenic, and in a few weeks his condition had so far improved that the diagnosis was doubted. He (Dr. Stewart) thought the man was well, and as such had him discharged from the Hospital. A few weeks afterwards he returned with undoubted symptoms of the disease again manifesting themselves, and there was little or no improvement following treatment on this second occasion. Still, the clinical symptoms on the first admission were quite as characteristic of pernicious anæmia as on the second. This shows that clinically there are no characteristic symptoms of the disease. The usual changes in the blood corpuscles which are described are not really characteristic, as they can be found in other conditions. In fact, it is doubtful whether there is any definite change in the blood which can be considered diagnostic of disease.

Dr. Mills considered it fortunate that this case has been reported on chemically. From regarding, as we once did, the blood as the source of all evil, we have gone to the opposite extreme of attributing too little power to it as being the seat of disease. The plasma itself has been too long left out of

account as a factor in the pathology of the blood, and yet it is very questionable if there is ever any very great modification of the cells without a corresponding modification in the plasma. The attention of clinicians is so drawn to the corpuscles that this part is neglected. He asked if there had been any microscopic examination made of the cells and tubules of the stomach, for in a discussion reported some time ago from Philadelphia, in regard to pernicious anæmia, some cases were cited in which the glandular portions of the stomach had actually atrophied, so that gastric digestion was necessarily very much interfered with.

Dr. Smith wished to know if in this case there was very much enlargement of the spleen.

Dr. Elder asked if evidence of malignant disease of the intestines had been present, would the case still be called one of pernicious anæmia? He further wished an explanation as to the quantity of blood found in the heart. Usually there is very little blood found in the heart after death from this disease, but in this case there seems to have been a good deal.

Dr. F. W. Campbell asked what was the general condition of the arterial system, for narrowing is supposed to be one of the causes of this disease.

Dr. Gurd inquired if the unusually large amount of iron found in the liver in such cases had been proven to be due to the large destruction of corpuscles, or if it might not be due to the practice of administering iron in anæmia.

Dr. Adami, in reply, said that there was a certain amount of atrophy found on examination of the stomach tubes, but the change was a very slight one, nothing like that usually met with. The spleen is never very much enlarged in pernicious anæmia. There are some cases in which the iron has been found to be increased in the spleen, but there is never that heaping up of it found in the liver.

The question of connection between pernicious anæmia and cancer is often a really difficult one to answer. The greatest authorities include a large number of cases of cancer in pernicious anæmia. Here comes the difficulty, whether we ought to speak of the cancerous cachexia as a pernicious anæmia? In the advanced cases of the cancerous anæmia there can be hardly any distinction made between it and pernicious anæmia.

Many cases of cancerous anæmia it is impossible to diagnose during life, and it is only in the post-mortem room that they can be recognized as other than the idiopathic pernicious anæmia. Perhaps this difference now found in the blood plasma may yet be of diagnostic importance in this respect.

With regard to the condition of the heart, this certainly is a remarkable case. There seemed to be a large amount of blood in the whole arterial system, not only in the heart, but in the thoracic and abdominal aortas. In fact, one has here the impression that there was present a certain amount of hydræmia. This is a remarkable point not generally observed, but one well worthy of notice. In this case, however, the autopsy was made a short time after death, whereas in other cases where the interval is longer it is conceivable that the heart might contract, and by so doing force the blood into the arterial system.

Lastly, as to the question of the cause of the accumulation of iron in the liver, it is generally accepted that this iron is derived from the breaking down of the blood corpuscles. In a very large number of these cases no iron has been given for months previous to death; no iron was given in this case. Also, it is found in experimental physiology that the administration of drugs which cause a destruction of corpuscles is followed by an increase in the amount of iron in the liver. From these and other similar considerations one is forced to the conclusion that this iron is derived from the breaking down of the red corpuscles.

Specimen of Appendix.—Dr. Adami stated that he had examined a section of the tube exhibited by Dr. Smith at the last meeting, and described the appearance of the section, which was seen to be that of appendix rather than ureter. He also cut a section of ureter, and had both present for comparisod, when the different characteristics of each might be readily appreciated.

Dr. England wished to make a few remarks on this most interesting case. The tube which Dr. Adami has examined and proved to be appendix was certainly a very peculiar appendix. At the time it looked very like the ureter, it was certainly a long ureter like looking tube, six or seven inches in length, taking a direction upwards and to the right, appar-

ently going beneath the liver. The other end of this tube disappeared into the mesentery in the midst of a lot of inflammatory tissue in which there were hard nodules. Now, the explanation simply lies in this, the part attached in the inflammatory mass must have been the proximal end of the tube, the distal end being attached in the higher region near the kidney. The tube also was a very small one to be appendix; it certainly was not larger than a goose quill. Then the condition of the woman did not allow of much time for deliberation, there being some doubt as to whether she would leave the table alive. The bladder, however, was filled with water, to see if it appeared in the abdominal wound, which it did not do.

Multilo ular Ovarian Cyst.—Dr. Lapthorn Smith brought before the members a small multilocular cyst, which he had removed from a patient recently. It was sunk right down in the Douglas sac in the middle line, and consequently was excessively painful in coitus, defæcation and locomotion. The case had been under his observation for one month, and in that time the tumour had doubled in size, so probably had it gone on it would have become quite a large tumour in the course of time. There was a large cavity inside which was filled with a very thick glue-like material.

Discussion on Tuberculosis.

On the Inter-Communicability of Tuberculosis from Animals to Man and from Man to Animals.—Dr. McEachran read the following paper on this subject:—

Mr. Chairman and Gentlemen:

Having been asked to assist to-night in bringing this most important subject before you, I accepted the invitation with much pleasure; not only on account of the importance of the subject as a study of comparative medicine having a vast bearing on the public health, but on account of the fuller knowledge which we now possess, as compared with what was known of the causation and means of diagnosis when I first brought it before your Society in 1870, twenty-three years ago.

Section I.—Shortly after coming to Montreal I was consulted about a disease which was decimating a herd of dairy

cattle in the neighbourhood of the city. This disease I found to be tuberculosis. The history of the outbreak pointed very clearly to the introduction of a cow from a herd at some distance. This cow coughed and did not thrive well and finally died of general tuberculosis. Others of the herd contracted the disease, and the herd was practically decimated.

Another farmer three miles from the city introduced the disease in the same way and from the same herd and lost his cattle.

Still another case of infection of a herd from the same source came under my notice. These well evidenced cases attracted my attention to its infectious character, and I lost no opportunity of tracing each subsequent outbreak to a source of infection.

In reading up the subject I became much interested in the reports of observations similar to my own published in the veterinary journals, particularly of the experiments conducted by Prof. Villemin, of Paris; Chauveau, the able Director of the Lyons Veterinary School; Harms and Gunther, of the Hanover Veterinary School; Lessering of the Dresden Veterinary School; Gerlack, of the Berlin Veterinary School; Zurn, of the Jena Veterinary School, and Bollinger, of the Zurich Veterinary School. The former confined his researches mainly to ascertain the communicability of human consumption to animals, and of bovine tuberculosis to the guinea pig, sheep, dog and cat. His results proved that bovine phthisis is identical with that of man. Chauveau proved its communicability by injection of tubercular matter in bovines and was the first to call attention to the relation of bovine tuberculosis to public health. Chauveau concludes his valuable report with the following resumé of his experiments. (*Veterinarian*, 1875.)

"1. They prove that bovine animals contract tuberculosis by digestive ingestion. 2. They place beyond doubt the fact as to the virulence and contagious property of tuberculosis, and show that the labours of Villemin have not been recognized as they deserved. 3. That the digestive canal constitutes in the bovine species, as in man, a channel of contagion readily disposed to the propagation of tuberculosis. The experiments of the others

named supported in every particular Chauveau's conclusions, and added new and important facts, showing that tuberculosis could be produced by co-habitation, both by inhalation and by digestion of the infecting principle, dried sputum, milk, flesh and other fluids being the active infecting agents."

The researches of Klebs proved conclusively that the disease was readily produced in dogs fed on milk from tuberculous cows.

Deeply interested as I became in this subject I naturally sought to awaken an interest in the matter among the members of this Association, in hope of being able through them to rouse public interest in a subject so seriously menacing public health, on account of there being no municipal or provincial regulations to prevent the sale of milk or flesh of animals affected by a disease which, if not identical with consumption, certainly was communicable and produced that disease in various forms in the human family.

For this reason I brought these facts before them in the form of a paper, with what result you can infer from the fact that to-day the same condition of things continues to exist in Montreal. No provision is made to prevent the sale of tuberculous milk, and scarcely any to prevent the sale of tuberculous meat. True, occasionally a carcass is seized at the abattoirs, when the tuberculosis is general and in an advanced stage, but I have known of instances in which the tubercles have been cut off by the inspector (some years ago), and the carcass stamped with the corporation stamp as sound meat.

Tuberculosis in cattle to-day in this province, and the whole Dominion in fact, is more prevalent than ever before, and, if I am rightly informed, consumption in the human family is increasing in like ratio.

I wish to cast no reflections on the members of the noble profession of medical science in this relation. The facts adduced by the investigations of the above named scientists were too new and the deductions too startling for a profession, too long remarkable for conservatism, to accept without doubt such disturbing ideas as consumption being contagious, or having any-

thing whatever to do with bovine consumption, and, as was the case with Jenner's innovation, when he proposed to prevent small-pox by substituting for it the milder cow-pox (vaccine), "A great ferment instantly arose, and the subject was hotly discussed both in professional circles and general society. Many of the sanguine and a few of the profound were at once convinced of the truth of Villemin's and Chauveau's opinions; but the cautious suspended their judgment, while the superficial and self-sufficient pronounced at once that the whole was an absurdity."

Professor Adami will bring before your notice the pathology of the disease. I must therefore confine my remarks to a few general facts on the prevalence of the disease, its peculiar features as observed in animals, and the relation of animal to human phthisis, and these remarks must necessarily be concise and confined to a statement of authentic facts gleaned from the work of others, supported by my own practical observations. Here let me remark in passing that I feel humiliated that we can offer no results of original work of our own; time and again I have urged and done all in my power to get established in or near Montreal in connection with our great seat of learning, McGill, a station for pathological investigation, wherein this and kindred subjects could be investigated from Canadian standpoints and under conditions purely Canadian, hitherto without success. Can this longer continue? Surely not. I claim that such a station is absolutely essential to put us on a right footing in relation to the prevention of disease and the eradication of disease in both men and animals, and gentlemen, members of this Society, it rests with you to demand that not only shall the city have its pathologist and pathological laboratory as part of its sanitary department, but similar provisions for investigating and preventing disease in men and animals shall form part of the Provincial Board of Health. Surely if the City Council, the Provincial Board of Health, or the Dominion Government fail in their duty in providing such laboratories, some large-hearted, science-loving and benevolent wealthy citizen will emulate Mount Stephen, Smith, McDonald or Molson, by conferring a lasting

benefit on mankind, and our fellow-citizens in particular, by donating a sum sufficient to enable McGill or other university to establish such a pathological station as will enable the medical practitioner or the veterinarian to act always under the bright light of science and scientific guidance.

SEC. II.—For the reasons given above, I must ask you to accept the following statements as facts regarding this disease :

(*a*) Tuberculosis is an infectious, fatal and incurable disease.

(*b*) It is communicable from man to animals, and has been communicated by inoculation, by ingestion and by inhalation in the dried form of the sputum of consumptive persons, as well as from the tubercular matter itself, to cattle, sheep, goats, swine, dogs, cats, rabbits, guinea-pigs, rodents, poultry, pigeons and, I may add, to man himself.

An interesting series of experiments (*Veterinarian*, 1875) were being conducted over twenty years ago by Demet, Paraskeva and Zallonis, in Syra, Greece, on rabbits by inoculation with the sputum and blood of a consumptive man. The opportunity occurring they ventured on the unprecedented experiment of inoculating a human patient whose history gave no indication of tuberculous taint, and whose lungs were perfectly healthy so far as physical examination could discover, but who was suffering from gangrene of the big toe of the left foot, due to obliteration of the femoral artery. Amputation of the limb was proposed by the surgeon, but would not be submitted to, and a fatal termination was inevitable. A quantity of sputum from a man who had abscesses on his lungs was inoculated in the upper part of the left thigh. About three weeks afterward ausculation revealed very slightly increased respiratory murmur at the summit of the right lung and somewhat prolonged respiration in the subclavicular region. In thirty-eight days after inoculation the man died from gangrene, and on examination of the body it was found that the upper lobe of the right lung had seventeen tubercles in the first stage of development ; two similar tubercles existed at the apex of the left lung. At the centre of the convex surface of the liver were two tubercles, one as large as a shelled pea, the other smaller, both being very hard and of

a yellow colour. From this unusual experiment it is evident that tubercle is inoculable in man himself.

(*c*) Tuberculosis in man is identical with tuberculosis in the bovine and other domestic animals, is due to a slender rod-shaped bacillus, which gaining entrance to the circulation by means of milk, flesh, sputum moist or dry, work their destructive operations in various tissues of the body, not in the lungs only, as is often supposed, but in the serous membranes, pleura, peritoneum, thoracic and abdominal glands, or superficial glands of the body, especially the udder, testicles, thyroid, parotid and other glands, and not unfrequently in the subcutaneous tissues in various parts of the body, in the meninges of the brain and spinal cord, and in the human subject frequently in the intestinal tract, and in many cases in animals it affects the articulations. The following statistics taken from the Report of the Bureau of Animal Industries, 1892, is interesting as showing the relative frequency of invasion of the different organs in cattle :

Bavaria—Tuberculosis of the lungs and serous membranes, 41 per cent.; tuberculosis of the lungs alone, 33 per cent.; tuberculosis of the serous membranes alone, pearl disease, 17 per cent.; tuberculosis of the other organs, 8 per cent.

Baden—Tuberculosis of lungs alone, 21 per cent.; tuberculosis of serous membranes alone, 28 per cent.; tuberculosis of both combined, 39 per cent.; generalized tuberculosis, 9 per cent.; tubercle of sexual organs alone, 3 per cent.

Sec. III.—*Tuberculosis in Cattle.*—I know of no country where cattle are domesticated in which tuberculosis does not exist. Statistics go clearly to show that it is on the increase.

In Germany, from October, 1888, to October, 1889, out of 1,270,604 animals killed for beef in public abattoirs, 26,352 were tuberculous, about 2 per cent.; in France 5 animals in every 1,000.

In the various cities in France figures obtained from inspection of abattoirs vary from 1.43 to 14.5 per 1,000. In Belgium, 4 per cent.; in Holland, 4 to 19.6 per 1,000; in England, 1 to 26 per cent. according to locality. In Copenhagen during 1888 it was 6 per cent., for cows alone it rose to 16 per cent. In the

Argentine Republic it attacked imported stock 10 to 15 per cent. In the United States 2½ to 3½ per cent. In Massachusetts this disease has long been prevalent. In 1888 Dr. J. F. Winchester made a report, his investigations covering 34 suspected farms, whereon were 886 cattle; of these 243 or 28 per cent. were killed, and 189, or over 28 per cent. of the remainder suspected. On 15 other farms, with 244 animals, he found 28, or over 11 per cent., tuberculous and 24 suspicious. Of the 213 suspicious in the latter class some were doubtless affected and were sold into other herds where the disease may not have existed before to act as new foci of infection. Later reports show exactly the same condition of affairs.

In Canada no statistics are obtained on the subject, yet while the disease is much less prevalent than in older and more populous countries, there is no denying that bovine tuberculosis is alarmingly prevalent. I say alarmingly, because considering the fact of our absolute immunity from such cattle plagues as pleuro-pneumonia, foot and mouth disease and Rinderpest, and knowing that we have the healthiest cattle in the world, the existence of any contagious disease is subject for alarm. I have known of herds being decimated from Cape Breton to the Peace River by the introduction of a single diseased animal.

How It Spreads Among Cattle—A tuberculous animal, bull or cow, is introduced to the herd, the bacillæ are coughed up, provided the lungs be the seat of the tubercular formations. The sputum may mix with the food in the trough in front of the adjoining animal and thus be swallowed; it may dry on the hay, feed-box or boards to be inhaled; in the former case it may develop messenteric tuberculosis, in the latter pneumonic or thoracic. It may be, if a cow, that other calves besides her own are fed on her milk, which containing the tubercular bacillæ, they become infected. If a bull, he may in the act of coition transfer the bacilli to the cow. No more frequent source of extensive spreading of the disease exists than tuberculous bulls. The calf is sometimes born tuberculous. I have seen cases where the placental membranes were studded by grape-like tubercles.

It is generally said to be hereditary—it is, but more frequently the calf contracts the disease from its tuberculous mother's milk or coughed up bacillæ. It is generally supposed that the milk will not communicate the disease to the calf if the udder is not tuberculous. This is an erroneous and a dangerous doctrine, and in connection with the communication of the disease by means of milk to mankind should be strongly rejected.

We have seen that it has been proved by experiment that this disease is readily communicated from consumptives to other animals, why not to cattle?

Symptoms—The insidious character of the disease, the absence of any definite symptoms in the early stages, the variability of the symptoms owing to the variability of its localization, render it often difficult of detection, till its invasion of the respiratory or other system of essential organs produces symptoms of structural or functional alterations in these organs. The breathing will be impared much or little according to the extent of tuberculization. Cough of a chronic character will be observed when the bronchi and bronchial glands are invaded.

There is usually an offensive odour from the respired air in advanced lung tubercle. There is usually no fever. Percussion will give dull sounds in spots if large tubercular masses press against the ribs, with increased resonance surrounding.

Auscultation illicits dull respiratory sounds over the large tubercular masses, increased in uninvaded portions of lung. The milk secretion is gradually diminished. In advanced stages emaciation is pronounced, particularly in dairy cattle, although I have seen animals die from tuberculosis compartively fat, particularly short-horn cattle.

Often no symptoms exist by which the positive existence or non-existence of the disease by clinical examination could be determined. It is this fact that has caused governments to hesitate and professional men advise caution in attempting to deal with tuberculosis as a contagious disease.

In this respect I may nay that while Britain and France did not officially include tuberculosis in the list of contagious diseases till 1888, you will find that it is so included in the Canadian

"Act respecting infectious or contagious diseases affecting animals," July, 1885.

The use of tuberculine as an aid to diagnosis promises to be of great value. Should it prove to be reliable its value cannot be over-estimated, for if correct direct diagnosis can be assured by the increased temperature following injections of tuberculine when the disease is present in the masked form, with our knowledge of its causation, we are now in the satisfactory position of knowing that we can by proper measures get rid of it entirely, in this country at least, where the disease exists to a limited extent only. Even without such aid or knowledge of the disease such as we now possess I have in several instances eradicated it from herds in this country and in the United States.

In one instance where short-horn cattle were sold for fortunes I was present and heard offered $5,000 for a young bull in an advanced stage of tuberculosis, which offer on my advice was refused, and I had him killed and made a post-mortem examination the following morning. In another instance I was sent for to a neighbouring State to give my opinion on a bull calf. I found him tuberculous and recommended slaughter, which was carried out then, the diagnosis confirmed, and before leaving the gentleman owner showed me an offer by telegraph of $11,000 for him. I mention these cases just to show how convinced these men were of its contagiousness and the danger to their herds if kept and the ruin to their reputations if sold.

How Tuberculosis is Communicated from Animals to Man—The contagious character of consumption is not now a debateable question. It is beyond doubt that it was considered communicable even in the days of Hippocrates, and if his own writings do not say so those of his contemporary, Isocrates, certainly do. Medical writers in all ages warned their readers of the danger of women contracting it from their husbands and men from their wives.

It is a well known fact that phthisis is often seen to affect people known to be free from any family history of tuberculosis. It is also well known that among savage tribes who are not milk consumers this disease is unknown, except by infection by other

strange people, whereas wherever cows' milk is in free use as an article of diet tuberculosis prevails. Dr. Edward Playter, M.D., Ottawa, in an excellent pamphlet on tuberculosis recently published, quotes from Dr. Brush, of Washington, the following pithy sentence as to the close association of the human race with the cow:

"We are veritable parasites on this animal. We milk her as long as she will give milk, and we drink it, then we kill her and eat her flesh, blood and most of her viscera. We skin her and clothe ourselves with her skin, we comb our hair with her horns, we fertilize our fields with her dung, while her calf furnishes us with vaccine virus for the prevention of smallpox. The cow has tuberculosis and we have tuberculosis. If we regard her as a possible common centre of the affection we have a reasonable and full explanation of the commonness of consumption."

Time does not permit me to relate the numerous evidences of tuberculosis in children produced by milk from tuberculous cows. At one time it was supposed that the milk was harmless if the udder was free from tubercle. This is now known to be erroneous, and milk from a tuberculous cow, whether thoracic, abdominal or external, is capable of producing the disease if swallowed.

Curiously enough, long after the infectious qualities of tuberculous milk were known, few believed that the flesh was dangerous, yet it is now known that the bacillæ are found in the flesh, and that they have been found alive even after ordinary cooking. Fortunately the vitality of the bodies is usually destroyed in cooking; were it not so the disease would be more common than it is, for let me assure you that such is the imperfection of the system of inspection, where even a show of inspection was made, that tuberculous meat is frequently sold in the markets to the poorer portions of the communities in nearly every city in Canada.

Until a proper system of inspection of animals before being killed and when killed, so that the whole of the viscera may be examined, on a simple subsequent inspection of the carcass without microscopic examination by a bacteriologist no inspector

could, after the tubercles have been removed, detect the disease in the flesh.

Bollinger considered that the mixing of milk in dairies lessened the danger of infection by diluting the virus.

The danger is not confined to cattle, since it has been determined by experiment that ingestion of the sputum by sheep, goats and poultry, from the lungs of a consumptive person, does produce tuberculosis in them, and they in turn may reproduce it in persons who consume their flesh. Reported instances of this disease having been carried to healthy families by poultry, infected by swallowing the sputum from consumptive persons who had charge of them, are numerous.

Much remains to be said on this important subject, and as two more speakers have to follow me I must conclude by expressing a hope that in a matter of such immense public importance full publicity will be given to the views of this Society. Desperate cases require desperate remedies, and I feel that we will but be doing our duty in giving the public our views in the hope that our civic and provincial sanitarians will be induced to follow the example of New York, where a bill was recently passed for the suppression of tuberculosis in milch cows, and Philadelphia, where a Society for the Prevention of Tuberculosis has been formed.

There has been organized in Philadelphia a Society for the Prevention of Tuberculosis. Investigation showed that families moving into tenements where the former occupants had been the victims of this disease exhibited symptoms within a short period, and unless removed succumbed. Dr. Flick in his report says:

"Fully one-half of the cases of consumption in the Fifth Ward are believed to be due to living in infected houses. A family unsuspectingly moves into one of the houses which, on the map, are marked with black dots. This house has just been vacated by a family in which death from consumption has occurred. The weakest member of the incoming family succumbs to the disease, the infection spreads to new victims, and death reaps a greater harvest."

The new Society will do most of its work among the poor,

teaching how infection can be avoided. All cases of consumption will be reported to the health board and registered. Consumption is a most fatal disease among the poor, and much can be done by education and by law, if it is enforced, to prevent it.

How many sad bereavments have visited our most happy families through this preventable disease, communicated through milk or flesh? It may be the father, the tender, loving mother; but more frequently the victim is the darling little one who, fed under medical direction, it may be, by the affectionate mother on milk—milk containing the deadly bacillus of tubercle—dies a lingering death, and the burial certificate read Cholera Infantum, or Cerebral Meningitis, whereas, if the truth were known, it should read Intestinal Tuberculosis, or Tubercular Meningitis. This is the history of many a case of tuberculosis in young men and women, cut down in the flower of their youth by disease contracted by consuming as food the milk of tuberculous cows.

Time and again this subject has been urged on the attention of the governments and public action has been delayed, first on account of the expense which would necessarily be incurred in stamping the bovine disease out, and also from the difficulty of diagnosis in cases in the initial stages.

Happily advancing science has given us a method by which it can be discovered in the earliest stages. It is verily believed that the injections of tuberculine, causing in affected animals a rapid rise in temperature, and no effects in non-infected animals, can be relied upon. If it proves to be so, then there is no excuse for longer tolerating the existence of this preventable disease, which must be credited with a large percentage of the infection of human beings by consumption.

On the Communicability of Tuberculosis from Man to Man.—Dr. Adami read the following paper on this subject:—

I had this evening intended to take up especially the relationship of tuberculosis in the domestic animals to tuberculosis in man, but after Dr. McEachran's masterly paper I think that you, Mr. President, and all here present, will agree that such would be

a work of supererogation, for in so doing I could but follow along similar lines, employ similar illustrations, and arrive at like conclusions to his. And when it is remembered that Dr. McEachran has made this subject particularly his own, that he was one of the pioneers in calling attention to the infectious nature of bovine tuberculosis, having published very conclusive evidence to this end so long ago as 1870, and that through his representations the Dominion led the civilized world by two years in scheduling tubercular cattle, I think that after his paper any disquisition from me upon this aspect of tuberculosis is unnecessary, although there are one or two details upon which later I should like to dwell for a moment.

I will therefore take up another and important aspect, namely, the infectiousness of tuberculosis as between man and man. Of this, after long years of discussion, there can now be no discussion ; but it is well worth our while to call to mind the main researches upon which our knowledge of this infectiousness is based. From the fact that in the adult the most common seat of the tubercular infection is the lung tissue (indeed, as Dr. Harris, of Manchester, and others have pointed out, careful examination shows the presence of active or obsolescent tuberculosis in the lungs of from 30 to over 50 per cent. of all bodies examined in the post-mortem room of the hospitals of large cities), it is evident that the disease in the adult is most easily acquired through the respiratory tract. How, then, do the bacilli come into the inhaled air ? Are they ubiquitous, do they multiply outside the body, or are they always acquired from animals or human beings suffering from the disease ? Certainly they are not ubiquitous ; the experiments of Cornet, to which I shall refer more fully in a few minutes, prove conclusively that from the dust of rooms that have not been inhabited by phthisical patients no bacilli can be obtained—that is to say, guinea-pigs inoculated with this dust never succumbed to tuberculosis. Again, the bacilli can only grow at the blood temperature ; evidently, therefore, they cannot multiply under ordinary conditions outside the body. But on the other hand they are endowed with great vitality. They withstand maceration and

putrefaction for several days, as demonstrated by Galtier, and, as shown by Baumgarten, Ransome and others, dried phthisical sputum can be kept for half a year or more without the contained bacilli losing their virulence. The presence of the bacilli in the dust deposited from the air in rooms occupied by phthisical patients was determined so long ago as 1883 by Dr. Theodore Williams at the Brompton Hospital. Dr. Cornet, while confirming these last results throws doubt upon them. However, Cornet's own observations were so admirable and so extensive that even if forestalled by Dr. Williams he is worthy of all credit as having established most fully the point in question. In place of filtration or collection directly from the air, he removed the dust that had deposited upon the wall immediately above the head of the phthisical patient's bed, and inoculating this dust, suspended in broth into the abdominal cavities of three guinea-pigs, in each case he obtained very remarkable results. Many of the animals died rapidly, as might be expected, of septic peritonitis, but he obtained a large number of cases in which one or more of the guinea-pigs succumbed to tuberculosis. Thus 38 separate examinations in 7 different hospitals led in 15 cases to positive results, while the dust collected from the neighbourhood of 62 private tubercular patients induced tuberculosis 21 times in one or more of the inoculated animals. When it is taken in into account that everything points to the fact that several bacilli must be inoculated in order to induce the disease, solitary bacilli being destroyed by the organism, then these results become most significant.

But Cornet did more than this. If, as these results demonstrate, the immediate neighbourhood of phthisical patients is rich in tubercle bacilli, then that neighbourhood must be especially infectious. Can this be proved to be the case? Very many individual cases have been adduced in which the husband of the tubercular wife has become tubercular, and *vice versa*; but statistics are still wanting of the extent to which this obtains, and those statistics are difficult to obtain. There is another class that can be held peculiarly liable, namely, sick nurses—not so much those attending individual cases as those attending upon

the sick in hospital wards, where necessarily, owing to the large proportion that phthisical cases bear to all other cases, each nurse must be brought into intimate contact with a series of tubercular patients The vital statistics of this class of the community can be more easily collected and studied. It was to this study that Cornet applied himself and this is what he found:—

In Germany the sick in hospital are largely attended by religious sisterhoods and confraternities. Taking thirty-eight of these nursing corporations he found that, during the last 25 years, of their total mortality 62.8 per cent., or almost two-thirds, was recorded as being from tuberculosis, while of those members of the corporations dying between the ages of twenty-five and thirty-five no less than 73 per cent. had succumbed to this disease, in place of a little over 40 per cent. in the general population. Or, to put the matter in another light, a German nurse, member of one of these sisterhoods, *has at twenty-five the same expectation of life as a woman at fifty-eight in the general population*. This is a terrible revelation. Little wonder that now-a days in Germany the lesson thus given as to the infectious nature of tuberculosis has been taken well to heart and that every precaution, even down to the disinfection of railway carriages, is being carried out by the government and by civic bodies.

If, as Ransome has proved, the breath of a phthisical patient contains the bacilli, *a fortiori* are the bacilli present in large quantities in the sputum, and it is this sputum that must be rigorously disinfected. Not only must this be collected in special utensils and then disinfected and the utensils rendered sterile by boiling daily (or, as some advise, be made of such materials that they can only be employed one day and then be cast into the fire), but the handkerchiefs and bed linen must be washed apart and well disinfected, the habit of promiscuous expectoration must be stopped sternly, and when a patient has died or has left a room then the walls and floor of that room must undergo thorough disinfection.

All these precautions are absolutely necessary, and it is our

duty to publish them widely abroad, if the spread of tuberculosis is to be averted. This, of course, is but one side of the question; there is still the undoubted spread of the disease through the intermediation of animals that Dr. McEachran has so well placed before us, through food, that is, where the bacilli gain their entry through the alimentary tract.

Intestinal and abdominal tuberculosis is most common, as we all know, in the young, and the prevalence of milk diet indicates what Bang in Denmark, Bollinger in Germany, Nocard in France, and Woodhead and MacFadyean in England have conclusively proved to be the case, that this intestinal tuberculosis is very largely brought about by the milk of tubercular cows. The milk, in fact, is far more infectious than the flesh of these animals. It is only in advanced tubercular disease that the bacilli are to be found in the musculature, the flesh of animals. On this account one might be inclined to say that in this country, where the habit of eating raw flesh is scarce, if at all practised, the flesh of animals exhibiting the lesser degrees of tuberculosis might safely be permitted to be sold in public market. Nevertheless, half measures are here no measures—if the disease is to be stamped out we must be drastic, and for this reason I would urge that all animals discovered to be tubercular be condemned *in toto*. We are here dealing with humanity's most terrible scourge, with the disease to which is ascribable nearly a quarter of all the deaths from all causes at all periods of life, far more deaths than from any other single cause. It is our duty, gentlemen, to use our every endeavour in spreading abroad a knowledge of the danger of tubercular infection and in inculcating sound means of prevention. It is our duty to give our individual and united support to every measure which tends to lessen its spread, whether in man or in the domestic animals.

Etiology of Tuberculosis.—Dr. BLACKADER read the following paper on this subject :—

Mr. Chairman,—If I understand my commands aright, I am to read a short paper on the etiology of tuberculosis from a clinical standpoint.

At the outset I must offer apologies for the somewhat disjointed character of my remarks, due to their very hurried preparation. I was only informed a few evenings past that the task of opening this part of the discussion had been allotted to me. After the very able papers by the Dean of the Faculty of Comparative Medicine on tuberculosis in cattle as affecting tuberculosis in man, and the paper by Professor Adami on the pathology of tuberculosis, my task becomes a comparatively limited one. My endeavour shall be to place before you, as briefly as possible, the more important facts connected with the origin of tuberculosis as met with by us as physicians.

We are all agreed as to the paramount importance of the tubercle bacilli in the causation of tuberculosis. Yet with many of us the idea of heredity still holds a most important place, as it is felt that no fact in our clinical experience seems less incontrovertible than the hereditary character of tuberculous disease. Careful investigation, however, indicates that this very general experience requires another explanation. Pathologists now tell us that it is the very rare exception to meet with hereditary tubercle, by the term hereditary tubercle implying the congenital transference of the virus, so that the infant enters the world with the bacilli in its tissues. In the vast majority of cases they say that heredity in tuberculosis signifies only "an excessive hospitality for the tubercular microbe, or a deficient capacity for dealing with him on the part of a too feeble phagocyte." In some cases heredity may signify even less, and if rendered into plain English should read "household poisoning by bacilli."

Up till lately it has indeed been questioned by some pathologists whether the bacillus can actually be transmitted to the fœtus, but in 1891 Birsch-Hirschfeld reported the case of a woman dying of acute general miliary tuberculosis at the end of the seventh month of pregnancy. The autopsy of the fœtus conducted with much care revealed numerous tubercle bacilli in the placenta, and portions of the liver, spleen and kidney transplanted into the abdominal cavity of guinea pigs and rabbits produced undoubted tuberculosis. This was the first well

established case of transmission from the mother to the fœtus in utero. Other observers have not been so successful, and clinically we know that symptoms of tuberculosis during the early months of infancy are comparatively rare. Epstein in 200 infants under one year, children of tuberculous parents, could not find signs of tubercle in one. Parrot in a very large out-door clinic had only 219 cases of tuberculosis under two years; of these 23 were infants under one month and 111 were under one year. Probably many of these latter were acquired rather than hereditary tuberculosis, for, at the present day, it would seem impossible to strictly define the two sets of cases. Lately, however, Baumgarten in a strongly written article still supports the view of hereditary transmission, claiming that the bacillus is present in many of the children of tuberculous parents, but asserts that it is latent, and that its future history is dependent in great measure upon the favourable or unfavourable condition of the soil offered by its host. It may in time, he thinks, lose its vitality, or may under depressed conditions of the system take on luxuriant growth. His views, although supported by some writers, are not yet proven, and are, therefore, not generally received.

It may be said, then, that the view genreally held at present in regard to the hereditary character of tuberculosis is that cases of true heredity are extremely rare, but that instances may occur where the mother is suffering from general miliary infection, or from definite tuberculous disease of the genital system.

In reference to acquired infection, there are three paths by which the bacilli may obtain entrance: (1) By inhalation through the respiratory tract. (2) With the food through the alimentary tract. (3) By inoculation. Of these perhaps the most important is the first—by the inhalation of dust containing the bacilli in a dried state. Shortly after his discovery, Koch definitely determined that the breath of tuberculous patients contains no bacilli. They are found, however, in immense numbers in the expectoration of those suffering from tubercular disease of the air passages. According to Dr. Prudden's expe-

riments, there are about 22,000,000 in the daily sputum of a phthisical patient with an average amount of expectoration. These bacilli appear to have great powers of resistance, and are able to retain their infective powers for a long period of time. While in a moist state they do not appear to escape from the sputum, but when the sputum becomes dry it is readily converted into dust, and the bacilli are then liable to be diffused through the air. Great care should therefore be taken over the expectoration of tuberculous patients, that it be thoroughly disinfected as soon as raised and afterwards destroyed, else the apartments occupied by such patients become infective in time through such dust clinging to carpets, bedroom hangings, etc. Not only may the living apartments become infective, but business offices and railway carriages, and even the dust of the roadside become a source of contagion.

This infection of apartments is well shown by the investigation of Dr. Flick, who localized all the deaths occurring from phthisis in one of the wards of Philadelphia for a preceding period of 25 years. He showed that nearly one-third of the houses in this ward had been infected by previous cases; that in many of these houses the deaths from this disease alone had been quite numerous, and that of the total number of deaths which occurred from phthisis in this ward during the one year 1888, more than one-half occurred in these affected houses. Inasmuch as there were more than twice as many non-infected as infected houses, this proportion is remarkable.

As might be supposed from the broadcast distribution of the bacilli through the air in such myriads, as is permitted by the present lack of care in regard to the disinfection of tuberculous sputum, we note that in the great majority of cases the primary lesion is connected with the respiratory system. Northrup points out the great frequency with which the bronchial glands become the seat of primary infection. Out of 125 post-mortem examinations on bodies of tubercular children, in 68 cases the bronchial glands showed that they had evidently been the part first affected; in 34 cases the dissemination was so general that no definite statement as to the point of primary infection could

be made; in 20 cases other parts of the pulmonary system showed evidence of early infection, and in 3 cases the mesenteric glands appeared to be the seat of primary infection. From these cases Northrup concludes that the bacilli enter the respiratory passages with the inhaled air, pass through the mucous membrane at any point, and enter the lymph spaces, and thus pass to the glands. Their subsequent career will depend upon the power of the tissues to resist their development.

Dr. Loomis has also shown that even in apparently healthy individuals these bronchial glands may be infected. In 48 post-mortem examinations of persons apparently free from tuberculosis, dying from accident or acute disease, and in whom no other evidenee of tubercular infection was found, triturates of the bronchial glands in eight cases developed tuberculosis when injected into the pleura of rabbits. And again, Ziemssen in a recent paper on this subject states that during an epidemic of measles in Munich Dr. Bollinger was frequently able to demonstrate the presence of tubercle bacilli in the lymphatic glands, chiefly of the lungs and mediastinum, in children dying from the attack, although they were said to have been healthy previously, and not to have shown any signs of scrofula.

These facts throw new light on the clinical experience many of us may be familiar with, that after a severe attack of measles tuberculosis occasionally supervenes. The attack of measles has only given the latent tubercle bacilli an opportunity to develop.

In addition to the frequent infection of the bronchial glands by the bacilli, the predilection of the apices to the occurrence of symptoms indicative of their presence is well recognized. This predilection has been explained on several theories; among others, it has been referred to an imperfect expansion of the apex or to defective circulation. Recently it has been pointed out that the thorax at the apex lacks contracting muscular tissue, and with forced expiration there is a recurrent passage of air into the upper lobes, interfering with the expulsion of any foreign substance that may have entered the bronchial tubes. When they have once entered this part of the lung,

Ziemssen thinks they experience an amount of rest, which enables them to penetrate to the sub-epithelial tissues and enter the lymph canals. This penetration generally takes place in the alveoli, where the epithelium is non-ciliated, rather than in the ciliated passages of the smaller bronchi.

While in adults inhalation of the bacilli and infection through the respiratory tract is much the most frequent origin of tuberculosis, in children the alimentary tract affords an important path through which the bacilli effect an entrance into the system. The upper part of the tract, owing to the very frequent disorders of the throat, mouth and teeth, occasionally becomes the place of primary infection, from which the bacilli pass to the cervical and sub-maxilliary glands, and thence may occasion general infection.

While in healthy individuals the gastric juice has the power of destroying the bacillus, yet in infants it is evidently much less powerful for this purpose than in older children and in adults. This may, we think, be very justly inferred from the greater tendency of infants to be seriously affected by the presence of other micro-organisms in their food. Summer diarrhœa, due principally to this cause, is almost entirely confined to infants under two years of age. Once the bacillus escapes from the acid of the stomach and enters the intestine its action is no longer interfered with owing to the alkaline character of its secretions and contents. Nature relies on the acid gastric juice as its chief barrier to prevent noxious organisms gaining access to the lower part of the canal. When this barrier is broken down by any disturbance of the stomach associated with imperfect secretion of gastric juice, any bacilli entering with the food have an almost unobstructed highway to the lower and more assailable part of the canal. Entrance appears generally to be effected through the lymph follicles of the ilium and large intestine, while the upper part of the canal almost invariably escapes, owing probably to the more active character of its secretions. In this way the frequency of intestinal and mesenteric tuberculosis in children may be explained. Woodhead states that in 127 children dying of tuberculosis the mesenteric glands were involved in 100.

The bacillus may gain entrance along with the food in many ways, but undoubtedly the most frequent method is in cow's milk. There can be no doubt, at the present day, of the fact that the milk of tuberculous cows may contain the specific bacilli, whether they have a tuberculous affection of the udder or not, although we may admit that the milk is much more liable to be infected if the udder or teats are diseased. The valuable investigations conducted by Prof. Ernst have demonstrated that the milk of tuberculous cows in 55 per cent. of the experiments conveyed tuberculosis when inoculated into the lower animals, even when there was no appearance of any tubercular mammitis.

Tubercular meat may also occasionally be a source of infection when imperfectly cooked, but this must be a comparatively infrequent source.

Other occasional means by which food may become contaminated, and thus afford a means of entrance for the bacillus to the intestinal tract, will occur to all of you on thinking over the subject.

A third, but fortunately only a very occasional mode of infection is by inoculation. Infection may occur from a wound in the post-mortem room or operating theatre. It has been occasionally recorded as a sequence to the performance of the rite of circumcision when the operator suffered from tuberculosis, and especially if there happened to be any tubercular sore upon the mouth. Vaccination is also a possible, although not a probable, source of the conveyance of the infection.

Under these circumstances, when danger threatens from so many sources, the question arises as to the best means of prophylaxis. Very fortunately for us, though many seeds are sown, only those that fall on favourable ground survive. The healthy organism appears able to rid itself of many intruders, provided its powers are not too much taxed by overwhelming numbers. It is when slight resisting power is super-added to the presence of infection that special danger is to be apprehended. The resisting power of the organism against the tubercle bacilli appears to be in great measure dependent upon

the following: 1. A healthy condition of the bronchial mucous membrane. 2. The healthy performance of the digestive functions. 3. The vigorous activity of the amœboid cells.

As physicians we should impress upon all our tuberculous patients the necessity that exists for complete disinfection of the infected secretions. The best method is probably by fire, as the bacillus resists ordinary disinfectants. The herds of all public purveyors of milk should be under regular government inspection, and diseased cattle should be isolated and killed. We feel convinced also that much more can be done by us as physicians in the way of prophylaxis by strengthening the barriers that nature raises against the intruders, than can be effected by any or all of our subsequent therapeutic, antiseptic or germicidal measures.

Stated Meeting, March 31st, 1893.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

Enchondroma of the Mammary Gland in a Bitch.—Dr. ADAMI brought before the Society a case of this condition on account of its rarity. Enchondroma has been very occasionally reported as occurring in the female, perhaps more frequently in the domestic animals. The present specimen, a bullet-like growth 2½ inches in diameter, was obtained from a setter bitch, having been removed by Mr. Hart, one of our students, in conjunction with Mr. Tracey, veterinary student. The growth would seem to be of less than a year's duration, and to have originated after a rather severe mammitis. The bitch had a litter of puppies in February, 1892. There was some difficulty about the weaning and one of the teats became injured and inflamed. The bitch recovered, but in the autumn a small lump was observed in the previously injured teat. It was removed at the beginning of last month.

The structure of this tumour is typical, it is slightly lobulated, and the centre is of bony hardness. Sections showed the lobules towards the periphery to be of hyaline cartilage, with some regions presenting stellate cells and less dense matrix; they were separated by bands of fibrous tissue. Deeper down the matrix became impregnated with calcareous salts,

but even at the centre there was not true bone. There were large channels in which ran the blood vessels surrounded by loose cellular structure, but the surrounding osteoid framework possessed neither proper Haversian canals or true lamellæ. Langlois, in the *Dictionnaire des Sciences Médicales*, gives a good account of these mammary enchondromata.

Papillomatous Outgrowth of the Lower End of the Ileum.—Dr. Adami exhibited for Dr. Wyatt Johnston the lowest three inches of the ileum presenting the above condition. Several tubercular ulcers had been found higher up in the ileum, but this last portion was quite free and exhibited numerous delicate papillary prolongations, the longest from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch in length. There was no sign of surrounding inflammation, and they differed both in appearance and structure from the larger coarser papillomata which not infrequently are found in the neighbourhood of ulcers. These are beset by villi and in structure most nearly resemble the hypertrophied projecting, solitary glands which are occasionally met with, but if this be their nature their length and delicate finger-like appearance distinguishes them from the specimens usually encountered in museums.

Dr. Wyatt Johnston said that this very unusual specimen was obtained from a patient who had died from taking Paris green. At the autopsy there was found severe tuberculosis of the intestines, with but little elsewhere. In the lungs there were two tuberculous foci, each about the size of an almond, and were composed entirely of little, grey miliary tubercles; there were also signs of old cicatrices in the apex of one lung. The case appeared to present the unusual conditions of primary intestinal tuberculosis, there being extensive ulceration of the cæcum and ascending colon.

The case is of interest from a medico-legal point of view, as to the possible interpretation that might be put on these ulcerations in view of the history of poisoning by arsenic. In regarding them from the side of the mucous membrane it would be difficult to say positively that they were tubercular; but in viewing them from the serous coat inwards their tubercular nature becomes quite evident. The polypoid nature of the growths is very interesting. They usually grow in the large bowel, and when they occur in the small intestine they

are usually in connection with leukæmia. The little projections contain lymphoid follicles arising from the lymphatic tissue of the submucosa.

Dr. Lapthorn Smith said that for the purpose of comparison with Dr. Johnston's specimen he had brought one shown by himself some meetings back. They are papillæ obtained from a papillomatous disease of the large intestine about the region of the sigmoid flexure. Dr. Adami, at the time, made a microscopical examination of these shreds and pronounced the growth benign, to the great relief of the patient. They resemble Dr. Johnston's specimen to the naked eye.

Dr. Wesley Mills, referring to the specimen taken from the bitch, said that enchondromata are rather unusual, although tumours of the mammary glands are quite common and tend to become malignant. By far the most remarkable tumour that he had ever seen in connection with the mammary gland was a cyst containing a large worm, some five or six inches long. This position for such a parasite was one of the most remarkable cases he had ever heard of. The bitch belonged to him and he had removed the tumour.

Dr. Adami hoped that Dr. Smith would not express too sanguine opinions with reference to the non-malignity of the intestinal growth submitted to him for examination some time ago. While from the appearance of the tissue examined it was undoubtedly benign, it is well known that these tumours, although at one time quite benign, may later take on malignant growth. Such growths were of a much coarser nature than Dr. Johnston's specimen.

Nephrectomy through Abdominal Incision.—Dr. Lapthorn Smith exhibited an enormous kidney, and gave the following history of the case: The patient was sent to me with what was supposed to be a large multilocular ovarian cyst. The tumour so completely filled the abdomen as to be immovable. It was movable with the uterus, which was pushed downwards, backwards and to the left by the growth. The tumour seemed to rest on the brim of the pelvis. On the bowels being well emptied I felt pretty sure that this was a tumour, not of the uterus, but of the kidney. I suspected pyelo-nephritis. When I opened the abdomen the tumour at once presented, but with a layer of peritoneum over it. After selecting a spot in the

peritoneum where there were no vessels we (Dr. Lockhart assisted me) made an opening and proceeded to dissect the peritoneum off the tumour. On reaching the back we found a large pedicle, which was regularly ligated. We then found the incision too small to deliver the tumour through; the latter was then tapped, when it immediately collapsed and delivery was easily affected. The renal artery was tied, and the kidney removed without any great difficulty. We then washed out the abdominal cavity with boiled water, and inserted a drainage tube at the lowest part. The pedicle was dropped into the cavity. During the operation there was little or no bleeding, and aftewards there escaped from the tube in the first 24 hours about two ounces of blood, when the discharges rapidly became serous in character. Since the operation the patient has had almost no pain and pulse and temperature have been normal. On opening the kidney it was seen to be saculated, and in one of the sacs a calculus was found. In regard to the condition of the urine, before the operation it was free from albumen, but very scanty in quantity. The first 24 hours after the operation she only passed 8 ounces, the next 24 hours the quantity had gone up to 20 ounces. No water was allowed to be taken by the mouth after the first 24 hours from operating.

Discussion on Tuberculosis—*Continued.*

Dr. Lapthorn Smith, in opening the discussion, said that Dr. McEachran's paper was the very thing necessary to rouse the profession to a true way of looking at the matter The infectious nature of tuberculosis has been more readily accepted by the public than by the profession, and in this respect the profession is not altogether free from blame. The public should have been long ago fully informed of the nature of this disease, for as a result of their ignorance thousands have died from exposure to infection—anæmic girls put into the hospital wards with tuberculous patients; young men in lodging houses occupying the same bed or same room with a chronic consumptive; young girls in boarding schools or convents.

We have so far laid too much stress on the idea that consumption is hereditary, and this is largely due to the habit of

insurance companies inquiring into all the branches of the family tree, but it never seems to occur to them that a person may contract consumption by sleeping in the same room with another in the last stage. He had met cases again and again where a perfectly healthy girl contracted consumption in a few months from a tuberculous husband, and cited a case here in Montreal of a young girl who moved into a house in May, in which a consumptive had died in April, and before six months had elapsed she had contracted the disease herself.

The children of consumptives are not more likely to die of consumption than any one else, if they are timely removed from infection. The death rate from tuberculosis among children in the hospitals in Paris, the greatest number of which are taken from tuberculosis parents, is not greater than that prevailing amongst children elsewhere. This Society has great influence, and if it sends out advice to the public, the advice will be well received. We can stamp out consumption as well as we can stamp out small-pox.

Dr. F. W. Campbell thought that perhaps he was one of those men who have been educated by insurance companies to look upon the transmissibility of this disease from one generation to another as the all important factor. There are sometimes facts which present themselves to a man's observation and which he fails to realize. The facts as regards the contagiousness of tuberculosis, which now seem so plain to our eyes, were no less plain ten years ago, but not having the theoretical knowledge of to-day to work upon, they either remained as stumbling blocks in our path, or were explained on other lines. In connection with tuberculosis, not only as a disease which we may communicate to one another, but also as one which may be contracted from the lower animals, we must remember that our patients should be guarded, not only against exposing themselves with friends who have tuberculosis, but also that the importance of enquiring into the nature of their food supply, especially that of milk and meat, should be duly impressed upon them. We will never reach the bottom of the difficulty until we get a thoroughly honest and scientific investigation of the city milk and food supply. So long as the milk is allowed to be delivered without bacteriological investigation, so long will our efforts be futile; we may isolate.

we may carry out antiseptic processes in the treatment of our patients; but so long as the milk and flesh of tuberculous animals is allowed to be used by the public, just so long will we have tuberculosis existing to an enormous extent among the population.

Now, although inheritance is no longer regarded as the sole factor in the etiology of phthisis, it is of unquestionable importance in this respect. There seems to be a great susceptibility of persons, under certain conditions, for the absorption of the tubercular poison. But there is no question as to the advisability of treating the affection as a contagious disease. The absolute necessity of at least partial isolation must be borne in mind. So far as occupying the same bed or the same room is concerned, so far as having every particle of expectoration disinfected or destroyed, the principles of antisepsis must be rigidly applied. The patient should be required to spit into cloths or a paper spit box, which may be destroyed So long as these precautions are neglected, just so long will we have tubercular patients. We may never get rid of the disease altogether, but there is a great future before us in modifying its existence. The first thing to do is to absolutely impress upon the people the idea that it is absolutely a contagious and infectious disease.

The treatment of tuberculosis is a question of great difficulty to the medical practitioner. When a tuberculous patient comes to him he is in a difficulty to know what is the proper advice to give. There is not a physician who, the moment he gets such a case, does not feel that he has a very complicated matter to deal with; it is often a matter in which finances play a great part. Many of us have of late been sending patients to Florida, to California, or to the heights of Colorado; but the amount of money required to enjoy such resorts will, in a great many instances, be beyond the means of the individual. Now we have within reasonable reach a place which is before long to stand pre-eminently the home for consumptives, and which is only a few hours ride from Montreal. There is to-day in the Adirondacks a sanitarium, under the care of Dr. Trudeau, which is indeed a very excellent place. This gentleman has done a great deal to make a good home for consumptives, his charges are only five dollars

a week, which includes the medical attendance; he treats cases, and treats them very successfully, almost entirely by keeping them in the open air, amongst the pines. Thus, while we have so desirable a locality close at hand, we should hesitate before recommending long journeys and great expense where fatigue and money are subjects of consideration.

Dr. Armstrong thought that it would be a wise proceeding if the facts brought out in the discussion were put in pamphlet form and sent to each member for consideration, and that some means should be adopted to spread this knowledge among the laity, for by so doing it would lighten the burden of the family practitioner. Every medical man knows how difficult it is to get families to carry out proper precautions when the disease is in their homes, because they do not realize the danger.

Dr. Wesley Mills had noticed, in watching the progress of thought in the profession, a very dangerous tendency to swing round from one extreme to another. This is very well seen in the relation of heredity to tuberculosis—from considering it the sole factor, we are coming to regard it as of no importance whatever. If we were to assume that heredity has nothing to do with the subject, we would be making a mistake, and a little consideration will show that all modern physiology and pathology attach as much importance to the invaded cells as to the invading ones. Heredity means the same tendencies in the offspring as in the parents; it may be associated with similarity of form, or it may not; it may be visible or invisible, but it is there. Now, we all know from the experience of breeders that an hereditary tendency can in the course of generations be annihilated, and this fact should be borne in mind in the forming of human alliances. By an injudicious alliance an inherited tendency to a disease can be intensified, just as it can be lessened by a judicious one. So that in spite of bacilli and antisepsis it is not less, but more important than ever that people should be warned in making their alliances for life. It is true that an individual who has no special predisposition, when sleeping with a phthisical patient may contract the disease, but that is an extreme case, and under such circumstances the infection must be due to the enormous quantity of the germs. As a rule, a person who

has no predisposition will not contract the disease, and an alliance of a predisposed person with such might help to eradicate the tendency. There are many instances in pathology when the contraction of the disease depends upon the quantity of the germs, and it is to such circumstances we must attribute infection where no predisposition exists. As to the question of whether the bacilli themselves can be inherited, it has been shown that the placenta has contained not only actual bacilli, but actual tubercles. What we have yet to determine is whether there is actual intra-uterine infection or not.

During the past few years he had bred many hundred pigeons of high breed, that is to say, pigeons which have deviated much from the normal by man's selection. Such organisms are easily disturbed, and disease works great ravages amongst them. It is his custom to make post-mortems on all deaths; some of them were submitted to Dr. Johnston, and by this means many facts about tuberculosis have been acquired; one is, that the organism is quite as important as the bacillus. For a time there was but a little of the disease, at other times considerable. How is that to be explained? The strains he was dealing with were known, as well as that environment which is best suited for resisting all sorts of disease. It is also known that in birds there is one particular period of the year at which their vitality is at the lowest, namely, when they are changing their feathers, which they do completely once a year. When the amount of feathers on a bird is considered, the amount of metabolism that is required to restore these feathers, and also when many of these feathers have blood at their base, it can easily be understood how the bird's vitality must at this time be at its lowest ebb; and it is at this period that tuberculosis, entritis, etc., is most prevalent amongst them. Then again, during the cold weather we have many instances of tuberculosis amongst our birds. These are splendid instances of how condition and environment may determine disease. Tuberculosis runs in birds a very rapid course. Symptoms of a serious nature may be absent to within a few days of death; even death may result without profound emaciation.

Dr. G. P. Girdwood could not disregard a hereditary

tendency to the disease. Whether tuberculosis passes direct from the parent to the offspring, or whether it is some weak constitution brought about by the union of two people with a mal-affinity, may be a disputed point; but every old practitioner knows it as a matter of observation, that in certain families all the individuals, one after another, die off as soon as they arrive at a certain age. In other families you find the greater part die off in consumption, all but one or two, and these usually the scapegraces, who have probably lived a less sedentry life—have lived more in the open air.

There is another point in connection with heredity, and that is, that a peculiarity of constitution may be developed which has no congenital antecedent in the nature of either parent, but that some transient condition of either or both parents, some depressed vitality, may at the moment of conception beget a constitution for the offspring which renders it liable to attacks of the bacillus in after life.

He had also seen associated with tuberculous disease, madness and cancer. There were families of which several members die of tuberculosis, some of madness, others, especially the girls, of cancer. Now it may be all the one tendency which takes a particular turn in certain constitutions, now developing into tuberculosis, now into cancer, and again into madness. Again, there are cases of acute mania in young men and women who recover and afterwards die of tuberculosis, which shows another association between madness and tuberculosis. Where this tendency lies is a disputed point.

With regard to the treatment of tuberculosis, he was strongly of the impression that the proper place for a sick man is his own home. All the advantages of distant places can probably be obtained at home, such as open air and exercise which keeps a man employed out of doors, and surroundings which conduce to health. These will place the patient in the best possible position to fight the bacilli. There is also a moral aspect of the question: What right has one member of a family to spend the money required for a change of climate, when by doing so it often means harassing, if not impoverishing, the rest of the family?

Dr. Roddick, speaking of the treatment, said that sending patients away is a subject of considerable importance, not only

to the patient, but to those with whom the patient has to travel. In a trip to the South recently he was obliged to live for a day and a half in a sleeping car with three persons very far advanced in phthisis. It not only impressed him very much, but many others in the same car; one lady absolutely refused to travel with them; she can not be blamed, as she was in delicate health. Three years ago he had crossed the Atlantic with a man who was going to the South of France; he was locked up in the same berth with this man, who was constantly complaining of draft and would insist on having the door closed. Such people are unquestionably dangerous, and should not be allowed to travel in sleeping cars or steamboats, except under special circumstances. In fact, in the South, where they have much experience of the results of such practices, so thoroughly alive is popular sentiment to the danger of contagion that many people will not occupy a room in a hotel unless it has been first as completely disinfected as if there had been a case of scarlet fever occupying it previously. This is causing so much extra expense that they are now refusing to receive consumptives in the hotels, and probably it will soon come to pass that in Southern resorts these unfortunates will have recognized quarters which they must occupy, and none other.

Dr. McEachran, in answer, said that he felt sure the remarks made, if published, would have a very valuable influence relative to the treatment of the disease in the lower animals, and causing some steps to be taken with a view to even controlling it among human beings.

When statistics in the human subject are looked for they are not as easily furnished as in the case of cattle; but if the similarity of the disease in animals and man can be shown, the facts furnished from the former should serve as data for our manner of dealing with the latter. With regard to copulation as a means of propagating the disease, he quoted several instances of unquestionable transmission in this way, and in this respect it can pass as readily from the male to the female as from the female to the male. He had met with many instances which show beyond doubt the communicability by contact, sometimes produced by the males, sometimes by the females, of this dread disease.

He thought that if the Society goes before the public and makes strong statements as to the nature and manner of dealing with the disease, it will be doing a work which shall prove a lasting benefit to the country, while so far as Government interference with the disease in animals is concerned, something will be done in the near future. The Government is going to get up pamphlets, distribute them broadcast, and have the public informed of the true nature of the disease. Now, if the medical part was equally made known, the combined effect would be a work of very great good.

Dr. ADAMI, in answer, said he was very glad that this subject of heredity had been brought forward. The right view, that is, the one which has been fairly well accepted, is that heredity does not imply an inheritance of the bacilli, but rather an inherited weakness towards resisting this particular germ. With regard to whether the fœtus is ever affected, there are two, if not more, undoubted instances recorded in which the fœtus has been affected by tuberculosis. There is no question but it can occur, but it is of very rare occurrence.

In conclusion, he agreed with what Dr. McEachran and every speaker had said, that information upon this subject should be widespread, and that the public should be made acquainted with the extreme infectiousness of this disease, and that we should do our best in every way to stamp out this terrible scourge.

The PRESIDENT named the following Committee to draw up rules in accordance with the discussion: Drs. A. D. Blackader, McEachran, Laberge, Adami and Wyatt Johnston.

Stated Meeting, April 14th, 1893.

JAMES STEWART, M.D., PRESIDENT, IN THE CHAIR.

Paralysis of the Arm following the Application of an Esmarch's Bandage.—Dr. JAMES BELL related the history of the case, the circumstances being, in his experience, unique. A young woman, 20 years old, admitted to the hospital Jan. 16th, with ankylosed elbow joint. The position was not a very bad one, being a little greater than a right angle. The history of the injury was as follows: On the 6th of last July she fell in a car, and, knocking against the wall, hurt her elbow. At the

time she did not pay much attention to it; but after awhile, the joint having become stiff, it was thought necessary to call on a doctor. The latter attempted passive motion, which was partially successful, but the ultimate result was ankylosis in the above position. Excision of the joint was advised, to which she after awhile consented, and the operation was carried out in the ordinary way. It was noticed, after removal from the operating room, that she had no power in any of the fingers, and that even sensation was not normal. Owing to the hand being encased in dressing, no very accurate observations could be made for some days, but it was remarked that the fingers perspired profusely. At the end of the third day after operation, being anxious and unable to explain the paralysis (the operation was done sub-periostial, and he was sure no injury had been done the ulnar nerve, besides injury to the latter would not account for paralysis of all the fingers and muscles of the forearm), the dressing was removed, and the explanation was at once patent. The Esmarch had been applied in the upper portion of the arm, just above the belly of the biceps, and below the prominence of the deltoid, and it had been tied so tightly that the skin was blistered. There was consequently no longer any doubt as to the Esmarch being the cause. The whole operation only occupied 40 minutes, so that the band altogether could not have been applied more than half an hour. Upon the discovery of the neuritis she was at once put under the care of Dr. Stewart. Motor paralysis remained absolute for three weeks. On the 21st day the first sign of movement returned, being a slight motion of the thumb; and after about six weeks' treatment she returned to her home with almost complete power of the arm. Once movement began to appear, it progressed very rapidly. She was able to flex and extend the arm and fingers completely, though not with the full amount of power. There, however, was no motion deficient.

This case is very instructive and very important, in view of the frequency of the application of the Esmarch. It is interesting on account of its rarity. It was the first time he had met with the accident, and considering the number of operations he had seen in the last twenty years, and the recklessness with which the Esmarch had been applied in all sorts

and conditions of patients, it seemed to him that this must indeed be a rare complication. It could hardly have occurred had the Esmarch been applied in any other part of the body; but it is a lesson well worth bearing in mind.

The PRESIDENT drew attention to the value of electricity in prognosis. This case, even up to the second week, presented no signs of the action of degeneration, so that, although the paralysis at the time was absolute, he could give a favourable prognosis, and the ultimate result justified it.

Myeloid Sarcoma of the Second Metatarsal Bone.—Dr. ADAMI exhibited the tumour because its position, namely, the second metatarsal bone, is distinctly uncommon, and therefore worthy of record. It was removed in the hospital recently by Dr. Shepherd, during which some difficulty was experienced, owing to the deep arch passing close beneath the second metatarsal bone. The arch was cut across and considerable hæmorrhage was experienced. At first it looked as if the tumour had grown from the tendons, owing to the latter being closely applied to its upper surface. Further examination, however, showed this was not the case; the tendons were with moderate ease dissected off, and the tumour seen to be attached to the bone. On examining the tumour microscopically, thin fibrous bands are seen stretching across the tumour, originating from the periosteal surface of the bone. We are then really dealing with a periosteal tumour. Further examination shows it to be a very pretty and very good example of a myeloid sarcoma. The main features are large spindle cells of various sizes; and amongst these some very large giant cells multinucleated. In addition to these, and accounting for this being rather a slow growth, there is a considerable amount of fibrous tissue in the tumour, and which in places has undergone hyaline degeneration. The correct name, therefore, for the growth would be hyaline myeloid sarcoma. The patient was a young man.

Upon Horse-Pox Affecting the Cow.—Dr. ADAMI brought this subject before the Society, not because his observations could be considered as other than at their commencement, but because at the present moment great interest is being manifested in the subject of vaccinia and the various diseases allied to or liable to be mistaken for it.

In Montreal, horses are very subject to horse-pox, and especially during this winter has the disease assumed the character almost of an epizootic. Dr. Adami himself had seen as many as twenty cases. It would seem to come on just about the time of a thaw, when the horses in their work about the streets are very much exposed to partly frozen water about the lower portions of their legs. Many of these cases this winter have been associated with the production in the groom, or those attending the horses, of definite eruptions, very similar to the true vaccinial pox. Dr. Bell and others present could give records of grooms and others going to the hospital with pocks on the hand, lips and face obtained in this way.

The case in question was one which occurred in the stable of Mr. Strathy, a gentleman who has well-kept stables. Unfortunately less than a month ago both his horses were attacked with horse-pox. Now, it is the custom in Montreal with many people to keep a cow in the stables with the horses, for greater warmth as well as for domestic convenience. Such was the case in Mr. Strathy's stable, and the cow was milked and tended to by the groom who looked after the horses. One horse had the pox about ten days, the other the greater part of two weeks, when it was noticed one Monday that there were upon the two posterior teats of the cow a small papular eruption. On Wednesday Mr. Baker very kindly showed him (Dr. Adami) the cow; the papules had then become distinct vesicles, and on the Friday following they showed well-marked scabs. There was a certain amount of inflammation in the vicinity; but this had been reduced to a minimum by the cessation of all manipulation of the udders and by employing a milk tube to draw off the milk. The scabs were very characteristic and accorded wholly with the classical pictures given of the true cow-pox affecting the udders and teats of the cow. The history seemed to be most clear. The stable was outside Montreal; the horses and cow were kept apart from all other animals, and they were attended to by the same man; the cow showed the characteristic eruption. It would seem most probable that here we were dealing with a case of horse-pox communicated to the cow by the milker, who was at the same time groom. A week previous to the

meeting Dr. Adami had inoculated a calf with the scabs rubbed up in glycerine, and again with the knife that he had employed in removing these scabs, with the result that on that day there were to be seen on the latter well marked typical vesicles, some beginning to dry up, some becoming slightly pustular, such as one gets in vaccinating the cow for the purpose of obtaining vaccine lymph. This is a subject of extreme interest. One hundred years ago Jenner declared that cow-pox was produced from horse-pox. On further investigation it was seen that he had made a mistake, that he had inoculated "grease" instead of horse-pox, and ever since the anti-vaccinationists have availed themselves of this circumstance as a fruitful source of derision in their attacks. Since then there have been many workers in this line, but the conclusions drawn have been very vague ones. He thought that the present case afforded an opportunity of doing some good work in clearing up the difficulty and establishing the identity or separate status of horse and cow-pox. Having once obtained a cow-pox from a horse, as we almost surely have done, and then by inoculation from the cow obtained typical vaccinia in the calf, if some human being will allow himself to be vaccinated by this lymph from the calf, and typical vaccine vesicles or pustules are obtained, Dr. Adami held that he would go near to prove that these two conditions are identical. It is an experiment well worth carrying out, especially as there is a commission now working on this subject in London and so far they have been able to arrive at no very definite results. Dr. Adami expresses his indebtedness to Dr. Baker for much assistance in this case.

Dr. James Bell saw two cases during the winter of horse-pox in grooms. The first man came with a sore on his lip; it was large, hard and indurated, with depressed, umbilicated, vesicular surface; enlargement of the lymphatic glands beneath the jaws. It was at first regarded as a hard chancre, though the man persistently denied any confirmatory history. Finally, on learning his occupation and whom he worked for, his case was better understood. No doubt it was a case of horse-pox. He was a groom to a gentleman whose horses had been afflicted with the disease this winter. Moreover, the subsequent history and development of the case confirmed the diagnosis of horse-pox.

The other case was seen some time after the foregoing, and, with the benefit of this experience as a guide, a diagnosis was more readily made. His was a sore thumb, and although the history is not so reliable as in the first case, still he (Dr. Bell) was practically sure it was a case of horse-pox.

Now, if it can be inoculated on the groom it can be inoculated on the cow, and this is another link in the evidence going to prove the identity of small-pox in the different species of animals, only modified by the special organism in each case. He asked for some information as to a differential diagnosis between "grease" and "horse-pox" in horses. It seems rather suspicious that horse-pox should be so prevalent in horses at a time of the year when they are exposed to wet and damp weather, which is known to be the cause of "grease" in these animals; or, in other words, that a good many cases of "grease" are diagnosed as horse-pox.

Dr. D. J. Evans said that a case of this kind came under his observation some three weeks ago. A groom who was attending to three horses, all of whom were afflicted with the pox, happened to get a slight scratch on his hand. At the seat of the scratch a little inflammation was noted, with some slight constitutional febrile disturbances; a vesicle formed, which in a few days became pustular, when it broke, and a marked little ulcer remained. The ulcer finally healed up, and left a distinct cicatrix behind.

Dr. Kirkpatrick asked if horse-pox protects against small-pox in the same way as when the vaccine has passed through the calf.

Dr. Gurd referred to a case he had seen about eight years ago. A groom, while attending to some horses suffering from this disease was accidentally inoculated in the cheek. An inflammation followed, and a typical vesicle was developed. The cheek began to swell considerably, and, being so close to the eye, he began to fear an injury to his sight, and went to Dr. Buller, who no doubt can corroborate these statements.

Dr. Smith, referring to the differential diagnosis between horse-pox and "grease," thought that the course and termination was sufficient to distinguish them. Horse-pox does not last two or three months, as "grease" often does. Like all the acute fevers, it is a self-limited disease. "Grease" is

looked upon as a neglect on the part of the groom to properly dry the horse's feet.

Dr. ELDER thought that there were still one or two links wanting to complete a valuable piece of evidence. He understood that the groom did not have the pox at all, and it seemed that the connection between the sickness of the cow and that of the horses is not clearly established. There is nothing more common than for cows to have cow-pox, and that this cow should have it at the time that the horses had horse-pox may at the most be only a coincidence. If the pox had been taken from the horse and put into the calf, then it would have been a direct piece of evidence. As it is, the calf was inoculated from the cow, and the resemblance of the calf's disease to cow-pox may, after all, be due to that, and not horse-pox, being the true malady of the cow.

Dr. ADAMI stated that this was purely a preliminary communication, and the experiments reported are only the beginning of a series of experiments. He had already taken material from the horses, also a scab from one of the grooms that has had horse-pox, and intended inoculating them in cows. With regard to the matter of "grease," one important point is the duration of the disease. "Grease" is a long disease; it does not have the stages of horse-pox. Horse-pox is a papular eruption, followed by the coalescence of the papules, the formation of vesicles and the development of the vesicles into pustules. Finally you have the rupture of these pustules, the formation of little ulcers and the healing of these ulcers, leaving behind a permanent cicatrix. "Grease," on the other hand, is not characterized by pustules, but rather by pus. It is simply a superficial inflammation of the skin, which goes on to suppuration. This refers to typical cases. Of course there are atypical cases where it is not so easy to separate them. He had seen a case of horse-pox in Montreal where regular suppuration took place, with great swelling and tenderness, but this is exceptional. He was not properly acquainted with all the manifestations which "grease" may undergo, nor could he give what he felt to be an adequate history of its course and termination, although he can detect it readily enough when he sees it. "Grease" is a subcutaneous as well as a cutaneous affection, and he doubted whether

it has any counterpart in the human being. With regard to horse-pox granting protection against small-pox, this is as yet an unsettled point. In the last few years a good many experiments have been made in this direction, and many of them seemed to declare that it did protect; others have doubted it. Among grooms, twenty or thirty years ago, when horse-pox was more prevalent in the old country, it was believed that it did protect, but this is also a matter which requires to be thoroughly investigated, and a complete series of experiments is urgently required.

Epithelioma of the Soft Palate, etc.— Dr. H. D. Hamilton, after stating that he had to thank Dr. George W. Major for the permission to utilize material from his clinic, read the report of the case, as follows :—

R. H., female aged 45; unmarried; a domestic servant; lived in Montreal.

First applied for relief at Nose and Throat Department of the Montreal General Hospital in November, 1891, complaining of soreness of the throat and painful swelling of the glands of the neck, both on the right side.

Present Illness—Began in the summer of 1891 as a small sore on the soft palate to the right of the middle line. This was described as a "pimple, about the size of a split-pea, painful and red like a burn." When this had been noticed one month a doctor was consulted, who used a paint, which the patient says cured the spot.

A few weeks later a similar sore appeared nearer the right, on the soft palate. This was treated as before, with no effect; the spot increased in size and the glands of the right side of the neck became swollen and painful, and when this had been going on for three months the patient applied at the hospital in November, 1891.

Through the winter of '91–'92 patient applied at irregular intervals at the hospital, and her condition seems to have remained about the same, with the exception of marked increase of pain in throat and neck when she was exposed to a cold. (She was able to keep on with her work.) When I first had the opportunity of seeing patient, June, 1892, she complained of difficulty in swallowing solids. The ulceration had then attacked the right posterior pillar of the fauces and the pharyngeal wall immediately behind.

Her case was followed up through the summer and winter of '92, during which time this discomfort varied in degree, but flesh was lost steadily, and the ulceration gradually spread towards the left, both by way of the post-pharyngeal wall and the soft palate, so that at the New Year the left cervical glands had also become involved, and the patient was obliged to give up work and come to live with a married sister in the city.

The tongue was attacked first in January, 1893. The patient was suffering from "la grippe," when an acute glossitis occurred. The swelling subsided in a few days, leaving a deep ulceration in the right side of the tongue, opposite a decayed lower tooth. The tooth was drawn and soon the tongue returned to its normal size, leaving a painful ulcerated spot marking the position of the tooth.

At this time the patient had been six months without solid food; pains shooting from the angles of the jaw towards the ears and vertex were almost constant. (Hearing was not impaired.) Nutrient enemata had to be commenced on the 19th of February last. The throat became so painful during an acute inflammation that the patient could swallow nothing. Feeding by soft rubber catheter was tried, but produced too much pain and retching. After a few days liquid food could again be taken in small quantities, but enemata were constantly used from that time. The ulceration of the tongue had now been present one month and had become surrounded by a hard mass the size of a marble. The voice was now noticed hoarse for the first time.

One week later, February 26, 1893, the floor of the mouth became rapidly swollen and very painful, the discharge from the mouth became blood-stained and fetid, and the patient coughed frequently. Lungs on examination found clear.

Patient was admitted into the General Hospital on 9th of March, where she remained for one week, having the artificial feeding regularly attended to, both by stomach tube and enemata. On returning home she kept her bed; took nothing by the mouth; her mind wandered frequently; the blood-stained fetid discharge from the mouth was very offensive.

March 27th the patient died suddenly after a large quantity of blood escaped by the mouth and nose. When seen earlier

in the day the wasting and weakness were very marked. The mind was weak. Pulse 124, small and thready; respirations 20; temperature (under the tongue) 97 2-5° F. No pain complained of.

Personal History—Negative, patient's habits being regular and her health always good before this disease began.

Family History—Father died of cancer at age of 55 years. (His tongue had been removed for this disease by Dr. Shepherd.)

General condition has been sufficiently described, except that the heart gave a faint systolic "bruit" over the mitral area early in the course of the illness.

Post-mortem examination could only be partial (by the wishes of the family), so I endeavoured to get as much of the diseased pharynx and larynx away as possible. The stomach and liver were roughly examined, but only a small infarction on the surface of the liver was found.

When the floor of the mouth, tongue, larynx and commencement of œsophagus were removed, the naso-pharynx could be felt a crumbling mass of superficial ulceration. The whole of the soft palate was absent; no bare bone could be felt. The parts removed showed bone attacked, viz, the greater ala of the hyoid bone on the right side. To enumerate the parts affected, we have the walls of the pharynx and naso-pharynx, the soft palate, fauces and tonsils, the larynx externally and internally on the right side. Externally the superior ala of the thyroid cartilage was absent, and internally the disease had reached the true vocal cord. The right half of the epiglottis was removed by ulceration, and the tongue immediately in front was infiltrated throughout its whole width, while the right side towards the tip was deeply ulcerated. The glands affected were beneath the jaws and the anterior cervical chains on both sides.

The course taken by the disease, as far as can be made out by the clinical observations, was as follows: First the right side of the soft palate and the cervical glands on the right; the pillars of the fauces, the tonsil and the side of the pharynx on the right. Then the back of the pharynx, the remainder of the soft palate, the left tonsil, fauces and anterior chain of glands. Towards the end the right side of tongue and glands below the jaw, and the interior of the larynx.

Sections from the tongue and left anterior pillar of the fauces were removed for microscopical examination. Dr. Adami kindly made the examination, and with his consent I will quote what was written at the time concerning the two sections:

"Sections from the tongue and palate are atypical epithelioma, that is, the masses of cells passing down from the epithelium into the deeper tissues are small and devoid of cell nests, so that at a very little distance from the surface the growth might easily be mistaken for a true carcinoma."

If I may impose on the time of the Society for a few minutes more, I should like to draw attention to a few characteristics of this disease accurately borne out in this case.

Epithelioma of the tongue runs a rapid course; the lymphatic glands are soon infected, and death follows in a short time.

Again, in malignant growths of rapid course, there is more than the usual tendency to be atypical.

Epithelioma of the tongue is seen to be influenced by irritation as a cause almost more than any other growth. In this case the tongue was affected within three months of the end. The microscopical examination has proved the growth to be atypical. The onset of the disease with the irritation of a root of a tooth against an acutely swollen tongue is significant.

I have gone thus fully into the case for the following reasons:—

Firstly, this is a case where the cancer clearly began in the soft palate and fauces: not at all a common occurrence.

And, secondly, since the variety of the growth is the same in both, the interesting question arises, viz. May the recent involvement of the tongue not be due to direct infection, the tongue being constantly in contact with the diseased palate and fauces? An avenue for infection was widely opened by the irritation of the tooth described.

Lastly, it is worth noticing the effect of "Influenza" in this case. Several times during the earlier part of the winter the patient came complaining of rapid onset of pain and swelling of the throat and neck, making it next to impossible to swallow or even open the mouth. The skin over the glands would then be red and tender. The attack of glossitis accompanied

one of these attacks, and most likely depended chiefly upon the epidemic.

Dr. Adami:—Dr. Hamilton's cases interested me a great deal. It is so rare to have two forms of carcinoma occurring in the same patient at the same time, that although this conclusion that the two forms were present was forced upon me as the result of first sections, I was unwilling to believe it, and have spent two days cutting and preparing more than half a dozen portions of the tissues, with the result that I am glad to retract my previous report. First of all, taking the facts as they come, in examining the tongue one is no doubt dealing with an epithelioma, though unfortunately this inflammatory condition, coupled with a foul sanious discharge, and the time that elapsed before the post-mortem was made rendering the whole surface more or less disintegrated, made it difficult to be certain. I find a proliferation of the epithelium; that proliferation is not the same as in the typical epitheliomatous proliferation. In some regions one sees it a proliferation affecting the ducts of the glands passing down the lower portion of the tongue, and again one sees these glands undergoing malignant change. In all sections examined there is this curious absence of well marked "cell nests," there are cell nests, but they are poorly developed. In the lower portion of the tongue the appearance is very similar to what one gets in scirrhus cancer, long thin lines of cancerous cells separated from each other by marked fibrous stroma. Then one sees the infiltration between the masses of the cells.

Going, then, to the fauces, there is here complete absence of anything like true epithelioma; in its place there is a carcinomatous appearance. However, in sections made to-day, in some regions nearer the tongue than those first made for Dr. Hamilton, one sees similar appearances to that found in the tongue, so now I say that throughout we are dealing with an atypical epithelioma. The epithelioma seems to spring from the lower portion of the epithelium, loses its appearance very rapidly, and soon grows to resemble ordinary gland cancer. When I came to examine the right vocal chord there I found purely inflammation and no carcinomatous appearance whatever.

Neurasthenia of the Stomach.—Dr. GUNN read his paper on this subject, as follows:—

The subject which I have chosen is one that can be but very imperfectly handled in one paper, so that instead of attempting to go completely over the ground, I select cases representing two or three of the commoner forms of this interesting malady, and hope, with the permission of the Society, to supplement later on this small contribution.

To fully appreciate the importance of our subject it is necessary to remember the gross and minute anatomy of the stomach, with special reference to the nerve supply. This hollow muscular bag is suspended in the abdomen in such a way that it is capable of great movement, so that each change in posture of body has a corresponding change in the stomach.

Besides these extraordinary movements, the stomach has others which are mainly peristaltic; the wave passing from the pyloric end along the greater curvature to the cardiac. There is also a small return wave along the lesser curvature.

It is by these complex motions that the food is brought into contact with the mucosa, and it is quite probable that the movements are for the most part specific and not originated by impulses entering by the nerves,—the latter acting only to bring the stomach into concerted action with the rest of the body.

The nerve supply consists of the two vagi, numerous fibres of the splanchic branches of sympathetic. Intrinsic ganglionic cells belonging to Meissner's and Auerbach's plexuses, and possessing the same arrangement as that found in small intestines, are of much interest and importance; the more so as Jurgens, of Berlin, has lately demonstrated degeneration in these ganglionic plexuses in certain neuroses of stomach.

Experiment shows that the sympathetic has nothing to do with the movements, as section and stimulation are equally disregarded by this viscus.

When the vagi are cut, the movements still go on, but in a more or less eccentric manner: thus it seems that the vagi merely preside over the rhythm, without actually carrying the impulses that set the mechanism in motion.

Need it be wondered at, then, that in an organ so independent as the stomach, with a nerve arrangement so complex, that we have nervous disturbances dependent on, and sometimes confined to this viscus. The great wonder is that for many decades after the renaissance in medicine, no thought was given to the possible relation of digestive disturbances to the nervous system. Catarrh and inflammation were then the *sine qua non*, the beginning and the end of all disorders, and when it was impossible to relegate the disorders to either of these categories, the physician satisfied himself and the patient by the most vague of terms "acute or chronic indigestion."

I wonder how many physicians of to-day look at the tongue, inquire about the bowels, diagnose dyspepsia and lean back satisfied with himself and the impression he makes on the patient. It is a fact that too many in all the sciences are looking too much at effect and not enough at cause. How many in our profession can prescribe a tasty and finely coloured mixture who have not yet learned the amount of solid and liquid food necessary to maintain the functions of body in health for twenty-four hours.

As late as 1878 Leube, who is father of the advances made in this line, concluded that many disturbances, found especially in women, which heretofore were called catarrh, are truly of nervous origin, and to substantiate his contention he gave the ordinary test breakfast, and after digestion began he examined the contents and found that in many of these cases digestion proceeded and continued perfectly normal. Yet, accompanying this act, certain symptoms developed, as headache, dizziness, palpitation, and others referable to the digestive tract, such as belching, eructations, yawning, hiccough, gaping, griping, etc. Leube argued that there must either be a poison generated and absorbed, or the nerves of the stomach must be hyperæsthetic.

As the disturbances began almost immediately food was taken he concluded, rightly enough, that the poison theory was untenable and that hypersensibility was the only sensible explanation.

It is somewhat difficult to understand that these disturbances,

coming often without any apparent cause, should affect the stomach, but few, if any, have a perfectly balanced nervous system, and vulnerable points are to be found if sought in every individual—points that respond too fully or too feebly. No resistance, no inhibitory power,—nerve storms sweep over them like the wind over the high seas. Weak by nature, weakened perhaps by excesses, what wonder that the stomach may, like other organs, call to us aloud. To-day it is admitted by all who have studied gastric diseases, that there exists a well marked neurasthenia which admits of classification according to the function disturbed—so that we may distinguish motor, sensory, secretory, and perhaps vaso-motor disturbances, the latter because it is possible theoretically, though no cases have been reported so far as I know, and would no doubt be very difficult to diagnose, unless cases which are characterized by great faintness and pallor be put in this class.

I will now give a history of two cases as taken from note book, the first being a type of what is known as Anorexia Nervosa.

Mrs. R., aged 36, came to office complaining of pain, as she called it, behind the eyes. I examined and found no impairment of vision. I then went into the case more fully, which is as follows:

Patient tall, angular and fair complexion; never was strong and since marriage worked unceasingly; bad family history—father, mother, two brothers, one sister, an uncle and aunt dying of pulmonary tuberculosis.

She was mother of six children, all showing more or less scrofulous habit, one being sorely afflicted with tubercular adenitis.

Physical examination showed a poorly nourished woman with long chest, projecting scapulæ, soft bloodless skin and flabby muscles, areolæ about the eyes, pinched lips, etc. She looked as if she longed for a transition to some happier clime. To a casual observer would seem as one ready to lie down and die but for duty to husband and family. Lungs and heart normal, urine pale, no albumin, no sugar; bowels regular as a rule,

some times a slight diarrhœa; tongue pale, clean and flabby. Appetite was entirely absent, never eating anything except when forced to by the family. Many days she worked without anything more than a cup of tea. She had not tasted meat for two years, bread and potatoes being her chief diet. She was not hysterical and by no means verbose, in fact, were it not for the pain about the eyes she would not think of consulting a physician. Rest with forced feeding effected a cure without medicine.

I have here detailed the history of a case who from birth was weak, and whose surroundings were not of the pleasantest.

J. Matthews Duncan says, "A good example of this trouble is one of the most ghastly spectacles you will meet with in practice, but the sadness of the picture is relieved by the fact that they always get better."

There is no wish for sympathy, as is found among hysterical patients—*au contraire*, they seek seclusion and say very little. The mental faculties remain unimpaired, in fact it seems as if in some the perceptive faculties become more acute and the reasoning more incisive.

Physically the case is still more wonderful, for the amount of exertion these patients are able to undergo is simply astonishing. They delight in long walks in lonely places, away from the annoyance of sympathizers and friends. If engaged in household duties they pay strict attention to every detail. They sleep well and are not melancholic as a rule; and when forced into company are not by any means disagreeable companions, for they never burden you with woes and heart-rending stories of misery and wretchedness.

This distressing condition must have an end, and often suddenly. The collapse comes, the tension is relaxed, the nerve-storm has spent itself and kind nature, ever ready to assert itself, comes to the rescue. Inviting dishes prepared by solicitous friends and forced upon a submissive patient; rest, the greatest of all therapeutic agents; the change in habits which illness often brings, always succeeds, in spite of the nauseating mixtures prescribed, in restoring the health.

Case II.—This is another sensory disturbance, but I mention it as showing that a sensory neurasthenia may be preceded by a motor, pathological equivalent, so to speak. Mr. G., aged 45, book-keeper, complains of severe pain in stomach about, as he expresses, two hours before meal time or three to four hours after eating. Especially liable to these attacks after any worry, and they usually persisted for some days.

Family history good; personal history interesting. From puberty up to time he had left England for a sea-faring life at age of 22 he was troubled for two hours after eating with regurgitation of food, which he chewed again and swallowed, this being a true rumination. This stopped when he entered navy, and he never had any stomach trouble again until he left the sea.

Upon leaving the navy he changes his active for sedentary habits and assumes the responsibility of book-keeper in a large firm; soon he begins complaining of stomach pains, and I saw him first on April 10th, when he presented the following history:

Highly nervous temperament, dark sallow complexion, fair muscular development, but no subcutaneous fat: all organs normal, no tenderness over epigastrum; tongue clean, bowels regular, urine normal; gastric juice as taken after test breakfast about normal as to amount of hydrochloric acid, and digestion with this fluid seemed to go on very rapidly. This was clearly, then, not a case of hyperæsthesia, but rather of gastralgia. This is a unique case, so far as I know, for here we have a well marked example of two distinct neuroses in the one stomach at different times.

General Treatment—It is first always necessary to determine whether the case belongs to the irritative or depressant form of neurosis, also how far the general bodily health needs toning up. In the irritative forms, shown by pain, vomiting, etc., opium and its alkaloids are our sheet-anchors, belladonna, hyoscyamus, chloral and other sedatives acting sometimes very well.

Washing out the stomach, as first recommended at Kussmaul's clinic, often relieves when everything else fails, and it is advisable in all cases that resist for any length of time the influence of drugs to try the washing.

Change of air very often does well; going from a low to a higher altitude and *vice versa*, or from a warm to cooler climate; sea voyages, sea bathing; changes of occupation, as from a sedentary to active life.

In the depressant forms, stimulants and forced feeding. Forced feeding must very often be done by means of a tube, as the patient frequently loathes the sight of food. In such cases gavage, as recommended by Dujardin-Beaumetz, is the best method. This is carried out by means of a short rubber tube reaching down œsophagus to a point opposite cricoid cartilage. Food should be liquid and introduced slowly to prevent vomiting. The amount of food per diem for an adult varies within wide limits, but it is always best to begin with a good deal and await developments. Wiessner recommends 100 grammes of albumin, 150 grammes of fat and 300 grammes of carbohydrates. This is represented by two quarts milk, two ounces butter, six eggs and three and a half ounces sugar. Feeding as a rule has not to be continued very long, for when patients find that digestion proceeds regularly they get encouraged and begin to eat of their own accord.

The argument first used and still used against forced feeding for weak stomachs seems hard to answer. But as a weak heart, weak lungs, weak muscles, are aided and strengthened by exercise, why can not the same argument apply to the stomach?

Experience has proven that from forced feeding, and it alone, can we expect to get good results in the depressant forms. In the irritative forms, such as vomitus nervosa, forced feeding by the stomach is almost a fatal error, and we must rely on sedatives and enemata; so that care must be taken in our diagnosis.

Each group of cases has its own peculiarities, and must be treated accordingly, and the physician who sticks to the one rut and changes not will often meet with failure. It is in neurotic patients that individual idiosyncracies must be studied and treated. Patience, firmness and tact in the physician are most essential attributes in dealing with these cases.

The PRESIDENT took exception to one of Dr. Gunn's statements, viz., that "anorexia nervosa" never occurs in the male sex. Most of the senior medical men in this city remember a case of the medical student named Brown who was suffering from this disease. He was looked upon as the most perfect type of the living skeleton that had ever been known. One of the most important of Dr. Gunn's remarks is that every case requires to be treated on its own merits. A great many of these cases are certainly very difficult to cure, and in the vast majority of them it requires a man like Weir Mitchell to be successful. There is something about the mental type of the man that is essential to success in such states. There is one form of treatment that Dr. Gunn forgot to mention, namely, hydro-therapeutics. Winternitz, in Europe, treats with cold water, but he is no more successful than Weir Mitchell.

Dr. LAFLEUR said that about three years ago he had seen a case of "anorexia nervosa" in the male. The man had at the same time another neurosis that increased very considerably the difficulty of the forced feeding treatment, viz., persistent eructations. However, when last heard of he was very much improved. In Johns Hopkins Hospital, Baltimore, they have had some experience wtih the Weir Mitchell treatment, having as a rule quite a number of patients in the private wards suffering from general neurasthenia, and many of them suffering from gastric disorders. He corroborated the statement that the treatment is very successful when properly carried out; but it requires a special type of man, one with unusual tact and persuasiveness, to carry it out, and unless thoroughly enforced it is worse than useless, it is really harmful.

Dr. WYATT JOHNSTON remembered a case which would probably come under the category of neurasthenia of the stomach, although not anorexia nervosa. The patient, a man slightly over 40 years of age, fairly healthy as a rule, fairly strong, from time to time suffers from the most severe attacks of what it would be impossible to describe as being anything but nervous dyspepsia. The attacks come on gradually; food begins to disagree with him. He has a great inclination to take food, but its inception causes him pain, and again pain is felt more when food is not taken. There were never any

definite signs pointing to an organic disease, such as ulcer; there were never any hæmorrhages or any definitely localized pain. These attacks used to reduce him to a perfect skeleton. They lasted several weeks, and during that time it is impossible to do anything for him. At the end of that time he gets perfectly well, and remains so for a year or more. One peculiarity he had about him was that when he began to get well he would diet himself, and, in spite of the extremely small quantity of food ingested, manage to perform a very unusual amount of a tive exercise. One slice of bread and three glasses of milk was his average daily allowance, while at the same time he walked from 10 to 15 miles daily, besides other active employment. Notwithstanding this discrepancy between the quantity of food taken and the amount of work done, he gained flesh, and picks up rapidly. Between the times he enjoys good health, but is any day liable to one of these severe attacks of gastric pain.

Dr. Gunn, in reply, said he was very glad to hear of cases of anorexia nervosa appearing in the male, as it corrects a wrong impression hitherto existing in his mind. This impression he received from the author quoted in his paper, who states positively it never appears in the male; and the cases mentioned here to-night he had not seen reported anywhere.

Stated Meeting, April 28th, 1893.

James Stewart, M.D., President, in the Chair.

Rupture of the Pulmonary Artery—Dr. Wyatt Johnston exhibited the specimen which, he said, illustrated a very frequent mode of sudden death. The patient, an elderly man, was overtaken suddenly on the street by a hæmorrhage, and when seen by a physician was practically in a dying condition. He was taken to the General Hospital, where he died. Owing to certain features of the case, especially owing to the body not being identified, an autopsy was ordered by the coroner, to make sure of the cause of death.

A quantity of blood was found about the mouth and fauces, and a large clot lay at the back of the pharynx. Blood was found in considerable quantities throughout the bronchial tubes, and also in the finer bronchi. In the right lung there

were spots of hæmorrhage into the lung, small pulmonary apoplexies, apparently due to the rupture of little blood vessels, caused by extraordinary respiratory efforts. The cause of death was easily found. At the apex of the left lung, which was adherent to the pleura, was found a cavity as large as a goose egg. Springing from the wall of the cavity could be seen a small aneurysmal sac, at one point of which was seen a rupture which was partly closed by a blood clot. An interesting feature was the state of the lining membrane of the cavity, which was covered with a grayish, ragged material, which upon removal left a smooth membrane behind, evidently a distinctly pyogenic membrane. The fibrinous flocculi on the surface were evidently the results of previous hæmorrhages, for as the blood exuded from the smaller vessels into this cavity in considerable quantities on several occasions, the walls became covered with fibrin.

This form of lesion is the commonest cause of death from pulmonary hæmorrhage, the other principal causes of hæmoptysis being rupture of the wall of an artery without the previous formation of an aneurism, or, less frequently, hæmorrhage from the granulating membrane lining the cavity. This latter, however, is more likely to give rise to small, slight hæmorrhages than to serious complications.

This case further shows the advantage of doing an autopsy on persons who die under mysterious circumstances. In this case it was thought that there might have been some foul play, some chest injury to account for the hæmorrhage, but when the result of the autopsy was made known the coroner decided that there was no necessity for an inquest.

A Case of Addison's Disease.—Dr. A. D. Blackader showed a patient suffering from what he believed to be Addison's disease, a disease characterized by two or three very prominent features: First, the discolouration of the skin, which in this patient is fairly well marked. More than that, it has the minute spots of discolouration which have been pointed out by Greenhow as being tolerably characteristic. He has also, on the front of the chest, pretty well marked patches of leukoderma. The symptoms, too, are fairly characteristic. The patient first entered the hospital complaining of asthenia, breathlessness, palpitation on slight exertion, inability to walk

or perform work of any severe kind. At present he is scarcely able to walk across the hospital ward without getting out of breath. There is also associated with these symptoms a tolerably moderate amount of anæmia, his blood now containing only 2,500,000 red capsules to the cubic millimetre.

One other symptom which has been put down as characteristic this man has not yet had, viz, symptoms of gastric irritation; there has been no vomiting, no diarrhœa. Still, considering the short time the patient has been complaining of any symptoms at all, that is only from about the middle of February, we are scarcely warranted in expecting the disease to have reached its full development.

With reference to the treatment, Dr. Blackader proposed to treat the case by feeding with finely minced supra-renal capsules. He was led to do so by the similarity which can be traced between this disease and myxœdema, which similarity is especially touched on by Dr. Osler. In both we have distinct histological changes met with in the tissues, being in the one an increase in the mucin, in the other an increase in the pigment of the cells; and they are both accompanied by marked nervous phenomena. In myxœdema we have mental dulness, in Addison's disease profound asthenia. We may also trace the likeness still further, when we come to consider the history of the respective glands which give rise to them. In myxœdema, before the connection was made out between it and the removal of the thyroid, it was stated that that gland was of no account in the economy, and that it could be removed without giving rise to any serious symptoms. Now, the same thing has been alleged of the supra-renals, and the question is whether they have any use in the economy, and whether their administration by the mouth will prove of any service in cases where the glands themselves are diseased.

Dr. Mignault referred to a case of this kind which had occurred many years ago in the General Hospital under the care of Dr. Osler. The patient, a young man, was brought there with a discolouration of this kind; every one was much surprised at the condition and many theories were advanced to account for it. Dr. Osler finally diagnosed the case as Addison's disease. The young man only lived three or four weeks. Both supra-renals were found diseased, thus confirming the diagnosis

Dr. G. P. Girdwood could just recollect having seen the case alluded to, and as far as he could remember the colour was very much the same as in this case.

Dr. Adami briefly noted a few cases of the disease which he had had the opportunity of observing. One of these was at the Addenbrooke's Hospital at Cambridge, England, a young woman, presenting all the cardinal symptoms of the disease, who, nevertheless, to the surprise of all, recovered under the arsenic treatment. He called attention to an autopsy held by him at the General Hospital the previous week, in which one supra-renal had become a caseous tubercular mass, the other being unaffected, and neither the history of the patient nor the post-mortem appearances yielded the slightest indication of Addison's disease. He referred to this case inasmuch as recently there had been recorded instances, contrary to the general rule, of Addison's disease associated with cancer, etc., of one supra-renal. He agreed with Dr. Blackader that the treatment by supra-renal juice was well worthy of being tried; the eminent success of Dr. Murray's plan of treatment of myxœdema by thyroid extract rendering it advisable that other extracts should be tested in other more or less parallel diseases, though he deprecated the excesses that were already being recorded in the employment of body juices.

Dr. Finley knew of two cases of Addison's disease which had occurred at the General Hospital within a few weeks of each other. The first case was one in which the pigmentation was very marked, as the patient came in late in the disease. There was excessive nervous prostration, vomiting and fever, the patient dying in a few days.

The other case was one in which pigmentation was absent, and therefore it was not possible to make a diagnosis during life. Yet the train of symptoms was markedly similar in both cases—vomiting, nervous prostration, delirium and death.

He recollected a case in which he had performed an autopsy for the late Dr. Howard. There was an injury involving the right supra-renal, but without any of the symptoms of Addison's disease.

Dr. Wyatt Johnston remembered the two cases referred to by Dr. Finley, and which were called Addison's disease in the hospital. One of the patients showed a considerable amount of

bronzing of the skin; they both suffered from diarrhœa, vomiting, nervous prostration and died, one of them rather suddenly. He had had some doubts about the correctness of the diagnosis. However, they have been looked upon as Addison's disease for some time. As to the condition of the supra-renals, in the one case there was slight tuberculosis, slight caseation; in the other there was none; at all events they were obscure cases, certainly not typical ones. He had examined the semi-lunar ganglia, with negative results, as far as finding any special fibrosis or atrophy of the nerves was concerned.

Dr. KIRKPATRICK referred to a man who came to the hospital complaining of general asthenia, and after some time developing illusions he was sent to the Verdun Hospital for the Insane. The asthenia increased until the man died, but shortly before death he developed marked bronzing of the face. At the autopsy the only lesion that could be detected was marked caseation of one supra-renal capsule.

Dr. MCCONNELL said that the treatment which Dr. Blackader is about to try seems to be in keeping with the principle which is supposed to exist, viz, that the organs of the body seem to be amenable to their own secretions when taken as remedies. The idea originated in Brown-Séquard's elixir of life. A great deal of fun was made of Brown-Séquard at the time, but his remedy does not appear to be discarded even yet. Some short time ago Dr. Hammond, of New York, announced a new remedy for heart troubles, which he calls "Cardine," and which he thinks will prove a strong tonic for weak and fatty degenerated hearts. All have read of the effects of the juice of the thyroid gland in myxœdema, which is simply carrying out the same idea as that now about to be tried by Dr. Blackader. We all will look forward anxiously for the results of this application.

Dr. J. E. MOLSON asked if a slow pulse is not a sign frequently found in Addison's disease.

Dr. BLACKADER, in answer to Dr. Molson, said that in all the literature he had read on this subject he had not noticed any such symptoms dwelt upon. With reference to the cases Dr. Adami alludes to of one gland only being affected, he understood that both glands are invariably affected in Addi-

son's disease. However, it is most likely one gland becomes involved before the other, so in the post-mortem room one supra-renal may be found to have undergone destruction, while its fellow is only in the early stage. Both Addison and Wilkes and others in Guy's Hospital considered it necessary for both glands to be affected. Cases where only one gland is involved do not seem to stand very severe criticism, but recent investigations seem to show that there may be symptoms developed when only one gland is affected. Of course if one gland is perfect it should be able to do the work of both, and there should consequently be no Addison's disease. If, however, this is the case, if with a perfect supra-renal capsule in the body we have still Addison's disease, my remedy is not likely to prove of much account, as that would destroy the theory that it is the want of this tissue that gives rise to these symptoms.

Sclerosis of the Brain.—Dr. JOHNSTON exhibited this specimen and gave the following report of the autopsy: Head only examined; nothing unusual about the scalp or external surface of skull cap; veins moderately full of blood; skull cap of ordinary thickness; tables not denser than normal; veins of diploe moderately full; in inner surface no irregularities or abnormal appearances; dura only slightly adherent to the calvarium, which is removed with ease; outer surface of dura normal; longitudinal sinus contains soft, dark, non-adherent clot in its posterior half. On reflecting dura the pia over both hemispheres is thickened and has an opaque, milky appearance. Beneath the pia is excess of clear fluid, somewhat distending the membrane in the regions corresponding to the sulci. Moderate adhesion of dura to the pia along the convexity. Pacchionian bodies not unusually large; brain removed with ease; slight excess of cerebro spinal fluid escapes during removal; dura at the base normal; sinuses normal. In the petrous bone on both sides the upper surface presents several small areas 0.1 to 0.2 inches in diameter, where a small cavity exists, only separated from the cerebral cavity by a thin, transparent, fragile membrane, readily broken with the point of an ordinary dissecting forceps. On examining the brain the contour appears to be normal; the vessels of the base are normal in size and arrangement and

are free from obstruction. There appears to be some thickening in the pia arachnoid extending out into the sylvian fissure. No signs of hæmorrhage and no appearance at all suggesting the presence of old hæmatin pigment. Over the convexity the pia is greatly thickened and detached from the convolutions with much difficulty; when removed the convolutions appear to be normal in size and outline; no cysts. There is no trace of localized disease in the convolutions; in regard to this point the third left frontal and motor areas of the cortex were examined with special care and with perfectly negative results.

On opening the lateral ventricles they are found to be of normal size. The choroid plexus is somewhat denser than normal and is slightly adherent to the surface of the ventricle at the head of the right corpus striatum. Adhesions between the floor and the roof of the ventricle also exist in the region of the corpora quadrigemina, and the fornix is reflected with some difficulty. The ependyma of the lateral ventricles is smooth, but on passing the finger over it the ganglia at the base feel denser than normal. The fourth ventricle appears widened, the ependyma covering its surface is thickened and covered with minute translucent grey granulations. The cerebellum is found to be normal.

On dissecting the ganglia at the base of the head of the right corpus striatum in the anterior one inch is smooth and of a dull greyish-yellow colour in patches. This region cuts with greatly increased resistance and leaves a smooth, pale, firmly resisting surface. On incising the substance of the hemispheres the white substance is found to be moderately firm and its vessels contain but little blood. The grey matter of the cortex throughout the whole of both hemispheres is greatly increased in consistency and cuts with great resistance; in cutting it a slight creaking of the knife is constantly noticed. On the cut surface the grey matter forms everywhere a raised ridge projecting above the level of the adjacent white matter. To the touch the grey matter feels firm and dense, the consistency being about three times that of normal grey matter. The colour of the grey matter is somewhat deeper and redder than normal and the thickness of the cortex is everywhere considerably reduced, being on the average 1 mm. and the maximum thickness being only 2 mm. This

condition appears to be diffused uniformly throughout all parts of the cortex and no focal lesions can be detected.

Microscopical examination.—Throughout cortex, ganglion cells reduced in size and fewer in number; stroma dense, and contains more nuclei than normal; no infiltration about smaller arteries; section of cervical cord in upper cervical region shows no sclerosis.

Remarks.—It is difficult to say to what extent syphilis is to be held responsible for the state of the cerebral cortex in this case. A diffuse cerebral sclerosis with atrophy of the nerve elements proper is thought by some to be always due to syphilis. Others only recognize syphilis when marked endarteritis is present. The absence of arteritis in any degree sufficient to explain the change seems to lead to the inference that while the syphilitic poison possibly was the cause of the lesion in the right corpus striatum, its irritative powers had probably passed away at the time of death. The lesions in the brain do not appear to be definitely syphilitic, though the absence of syphilis can hardly be held proved where no examination of the other organs was made.

Dr. Perrigo gave the clinical history. In November he was called in to see the patient owing to the results of his falling down stairs. At that time the appearance of his face was so peculiar that it was thought he had been drinking, but afterwards this was found to be a mistake, he was an abstemious man, and had been so for years; but in the course of the enquiries a history of syphilis occurring some 50 or 60 years ago was obtained. His condition then and afterwards showed something as follows: In walking, while he could perfectly co-ordinate, he would suddenly have to sit down, as if struck on the head, owing to loss of power in his legs; it was this that caused him to fall down stairs. He was ordered the iodides, and that treatment was followed by a gradual improvement. Then he developed epileptiform attacks and some loss of memory and defects in the power of speech. This last was not of an aphasic nature, nor yet one of articulation; he seemed to stop in the middle of a sentence or middle of a word and go on to something else, all the time being unconscious of this defect.

On being sent to the hospital he appeared to improve, his

speech became better, memory better, epileptic attacks ceased, the attacks of sudden sitting down became less frequent, and he was discharged practically a well man. In regard to the iodide treatment, at one time he was taking as much as 320 grains during the 24 hours.

The patient then went on a trip to Baltimore, and while there he grew worse. His defect of speech returned, patellar reflexes were gone, memory was lost, epileptic attacks returned, and he appeared to lose at times control of his muscles. In going to bed, for instance, in sitting on the edge of the bed, his legs would go through a series of irregular motions. He never, however, had any difficulty in feeling the ground. He then became maniacal and finally died.

Dr. Lafleur asked if the epileptic attacks were those of true epilepsy, or of a Jacksonian character. The reason for asking was because he had seen a precisely similar case, in which the same diagnosis was made—cerebral syphilis with meningitis, right-sided paraplegia beginning in the foot and gradually travelling up the leg. The patient was put on anti-syphilitic treatment, without much result. At the autopsy there was no evidence of syphilis in the brain or viscera, in fact, no obvious lesion of the brain. But on more careful examination just such a condition as Dr. Johnston has described was found—diffused sclerosis, narrowing of the cortex. There was no lesion of the basal ganglia. There is a close similarity between the cases, both from the clinical history and the autopsy.

Dr. Armstrong related the condition of the patient while in hospital. His symptoms were mixed ones. He was maniacal and required a man to keep him in bed. His symptoms were largely irritative; noise would irritate him; lifting an arm would cause general spasms of the body. The right side of the body was distinctly weaker than the left; the grasp of his right hand was nil, while that of his left was fair. In addition to these he was unconscious for two or three days; no questions could be asked at all, and when consciousness and speech returned he was distinctly aphasic. Not being able to get any information from himself the diagnosis had to be made from the history and remarks of his friends. A diagnosis of cerebral syphilis had been made in London, and

on the strength of this he was put upon the iodides and mercurial inunctions. Improvement took place, the power returned to his right side, his memory returned, speech returned, and his general condition was one of apparently very considerable improvement, supposed to be in consequence of the anti-syphilitic treatment.

Cirrhosis of the Liver with Jaundice.—Dr. Wyatt Johnston exhibited the specimens from a case under the care of Dr. Perrigo and read the history of the autopsy as follows:

Autopsy 28 hours after death.—Body of a large elderly woman; abdomen distended. Body intensely jaundiced over the entire surface of deep bronze tint; conjunctivæ deep yellow. Moderate rigor mortis and lividity. Subcutaneous fat in fair amount of deep bronze-yellow colour; in peritoneum about three quarts of clear, bile-stained fluid; peritoneum smooth; omental fat abundant; colon and small intestines considerably distended; liver does not extend beyond costal border. Spleen very large, over 300 gms.; on section dark and abundant; consistency not increased. Kidneys both appear to be nearly double normal size, are soft and deeply jaundiced. The cortex appears swollen; supra-renals normal, pelvic viscera appear normal. Stomach contains about a tumblerful of brownish-black fluid. Mucosa reddened and shows signs of ecchymosis; mucosa soft, not thickened. Duodenum contains dark, slaty, greyish fluid. Bile papilla normal in appearance and no signs of catarrh in its neighbourhood. On slight pressure on the bile duct a clear, almost colourless, greyish mucous fluid readily flows out of the papilla. Bile ducts rather large, walls thin; their mucosa appears normal; no increase of connective tissue about the ducts; glands in portal fissure not increased. Gall-bladder contains a tablespoonful of pale greyish, thin fluid, not in the least bile-stained. Hepatic artery normal; portal vein rather small in calibre but appears normal. Liver weighs 1,900 gms., is of a deep yellow-brown colour, mottled with small pale yellow spots, evidently fatty. The surface is uneven and has a fairly well marked hob-nail appearance, the projecting portions of tissue being separated by fibrous strands running in all directions between the lobules. On section the organ cuts with but slightly increased resistance and to the touch does not feel very dense; the sur-

face yields a greyish pulp on scraping; pancreas normal. Intestine contains greyish fæces; near the ileo cœcal valve the mucosa is normal. No enlargement of retro-peritoneal or retro-thoracic glands; lungs crepitant. Heart not opened. Brain not examined.

Microscopic examination of liver shows intense jaundice of the hepatic cells in places, with marked fatty infiltration irregularly distributed. Increase of fibrous tissue, which penetrates between and into the acini. No changes in connection with the bile ducts; no proliferation of epithelium or connective tissue in connection with the smaller ducts.

Remarks.—The rarity of icterus as a complication of cirrhosis of the liver makes it worth while to study carefully every case of this kind met with. In the present instance no changes were discovered at the autopsy or by microscopic examination to show that the jaundice was obstructive or had anything to do with anatomical changes in the bile passages, and is therefore not the biliary cirrhosis of French writers. According to Fagge icterus occurs in about 10 per cent. of all cases of cirrhosis of the liver, and is almost always a bad omen.

Dr. Perrigo said that the patient had been under his observation for the last 14 or 15 years. She was a lady who was a good illustration of the difficulty of obtaining a reliable history in family practice. It was only the day after the autopsy that he succeeded in eliciting a true account of her private habit of dram-drinking. The case shows well to what an extent tippling can be carried on and yet kept secret from both husband and family. The patient was of a remarkably despondent temperament, always looking at the blackest side of every question. She was the subject of chronic rheumatism as well as chronic bronchitis, the latter, however, improving during the last year or two. About nine weeks ago, shortly after having a cataract removed from her right eye, she developed jaundice. Previous to that she had morning vomiting for six or seven days. The jaundice continued for six or seven weeks, but finally it disappeared under treatment, and remained away for three or four weeks. During this interval, however, she did not pick up her strength as well as might have been expected. Suddenly the jaundice reappeared and became very intense, and just as suddenly, a couple of weeks

before death, ascites appeared. The latter rapidly filled up the peritoneal cavity and impeded respiration so much that it was thought advisable to tap her, which was done a few days before death, and several ounces of fluid drawn off. This, however, was not followed by much improvement as she finally became comatose and died.

From her facial expression he had suspected tippling, but always received such positive assurances to the contrary that he was obliged to put that possibility aside. During the last five or six months she had a peculiar drawn expression that made him suspect malignant disease.

Dr. BLACKADER endorsed Dr. Perrigo's remark of how frequent the habit of tippling exists in ladies in whom one can find no reasonable signs of it, ladies who had been secret tipplers for years, and yet in whom he was unable to detect the slightest symptoms of it; the tongue was clean; no excitement in conversation was ever evinced, no flushing of the face and, in fact, nothing which might point to the real cause of their trouble, namely, alcoholism.

The PRESIDENT suggested an examination of the urine for alcohol in such cases as a means of arriving at the diagnosis.

Appendicitis Occurring in a Patient with Sacro-Iliac Disease—Dr. ARMSTRONG related the following case: A young girl, 14 years of age, came to the hospital with a letter saying that nine months before she fell down stairs. Nothing was thought of the injury at the time, until about three months afterwards she developed a tumour in the right iliac fossa, accompanied by a temperature running about 103°. This condition improved, the temperature became normal, she was considered convalescent, but the right thigh became flexed and has remained so.

As she appeared in the hospital clinic, as to diagnosis, two very good arguments could be made out: one man could argue very strongly in favour of sacro-iliac disease; another man could produce just as convincing evidence in favour of appendicitis. In favour of the first we had the history of an injury, tubercular family history, flexion of the thigh, lateral curvature of the spine, that peculiar hitching up of the right side of the pelvis, which on looking at it from behind makes the perfect picture of sacro-iliac disease. In favour of the second we

had the tumour, the high temperature, the pain, nausea, vomiting, etc. To settle the matter he decided on a exploratory incision, and on doing so very readily came down upon the appendix lying in a little pocket of pus. As this point it seemed quite clear that the case was one of appendicitis. However, after the appendix was removed and everything made nice and clean, he noticed that the right iliac fossa seemed to come forward more than usual, and on closer inspection decided there was evidence of inflammatory products within the sheath of the psoas muscle. On making another incision, then, this muscle was found throughout nearly the whole of its extent infiltrated with the ordinary cheesy material, commencing near the crus of the diaphragm and extending down to Poupart's ligament, where, no doubt, if left long enough, it would ultimately have pointed. Over the sheath of the psoas, and attached to it, the appendix was lying; at one spot there looked as if some necrosis had taken place, but there was no actual communication between the abscess in the appendix and that in the psoas.

So that, as may be seen, the evidence in favour of both conditions was well founded, the truth being that here we had a case of sacro-iliac disease, in the course of which an appendicitis was developed. The patient made a good recovery after the operation; her temperature is normal, and she appears to be doing nicely in every respect.

Dr. Adami regretted that his investigation had not been as thorough as he would have wished. Examining some of the cheesy substance, however, he succeeded in finding some bacilli. In the appendix he found some chronic thickening, the outer wall being especially thickened and congested. On making the bacteriological examination he found in addition to inflammatory products, a large number of diplococci, micrococci and other pyogenic organisms; so that bacteriologically he came to exactly the same conclusion as did Dr. Armstrong clinically, viz, that in the appendix there was a simple inflammation, as shown by the presence of the ordinary pyogenic organisms, while in the cheesy matter we had tubercle, as shown by the presence of the bacilli.

Poisoning by Paris Green.—Dr. Wyatt Johnston, exhibiting the specimens, said that lately this usually quiet com-

munity seems to have taken to poisoning itself with paris green, as within the past month four or five cases of this nature have come before the public. On Tuesday last two inquests were held on cases of this nature by the coroner. In one case a large dose was taken about one week before death; the duration of life after the inception of the poison was due to the treatment which was inaugurated very soon afterwards, the pump and emetics being employed with a fair degree of success. In the second case a smaller dose was taken, but owing to the man not coming under treatment for some considerable time afterwards, he died much sooner than the first one.

The first specimen is from the case in which a relatively small amount of poison was taken and in which little after treatment was employed. There is intense engorgement of the vessels and ecchymosis of the stomach walls. As a rule, in arsenical poisoning the changes in the stomach wall are not nearly so profound as one might expect to meet with according to the descriptions given in the text books. In this case, however, there is an extreme degree of ecchymosis of the mucosa, hæmorrhages into the deep mucosa. The duodenum also shows intense congestion, which evidently has gone as far as complete stasis. More or less hæmorrhage has also occurred in places throughout the intestinal tube, and well down in the jejunum particles of paris green were found.

The other specimen is one in which the dose of the poison was larger, but where the contents of the stomach had been speedily evacuated, death occurring one week afterwards. There is some congestion, although the reddening in the specimen is more pronounced than at the post-mortem owing to the action of the fluid in which the specimen was preserved. There is no ulceration here, no necrosis, simply a congestion of the mucosa. Congestion in this case, however, is not a symptom diagnostic of poisoning. The man just before taking the poison had been on a rather prolonged spree, and was besides an old drunkard, and under these circumstances some congestion of the mucosa might have been expected, independent of the poisoning.

An interesting feature in connection with the first case is that in the brain a region of softening was noticed in each

hemisphere, almost symmetrical and situated in the region of the internal capsule. It is very unusual to find lesions of this kind bilateral, and still more so to find them situated in almost the same region on each side. In this case they go to show the existence of an old standing brain disease. This is a very important discovery from a medico-legal point of view. In the eyes of the law wilful suicide is a crime, but suicide while insane does not constitute a crime. This has important bearing socially, and also has certain religious relations which makes it very important to determine, if possible, whether suicide occurs in an insane person or not. In this case an autopsy was ordered for the special purpose of determining whether insanity could be established or not, and there was no doubt that a man with this condition of brain would be certainly one that would be extremely liable to suffer from mental weakness. We know that where there is a tendency to softening of the brain it is customary for patients to show more or less an unsound condition of mind, and in this case the history of the man's life during the last few years seemed to point to some cerebral trouble.

Dr. W. F. Hamilton related the clinical history. The first case which came to the hospital was that in which a small quantity of the poison was used, half an ounce being the amount stated to have been taken. The man said that he had taken the poison at about 3 p.m., he walked home about 5 p.m. and was first noticed by his wife and daughter to be ill. To their enquiries as to the cause of his illness he admitted having taken poison, and a doctor was at once called who administered emetics and antidotes, and succeeded in having ejected some paris green and a considerable quantity of blood. At about 7 p.m. he, Dr. Hamilton, was called in, when he found the patient in a condition of collapse, his pulse being very weak, etc. Thirty grains of zinc sulph. with large quantities of warm water were given and then washed out the stomach with the stomach tube. At about half-past nine he was sufficiently revived to be conveyed to the hospital in the ambulance. On his arrival there another very efficacious emetic was administered, namely, a teaspoonful of mustard with a large quantity of warm water, which was followed by copious emesis, in which more paris green was noticed.

At 12 p.m. he appeared to be a little easier; at 7 a.m. he complained of intense pain in the abdomen; his pulse was 120, his respiration 30. Bismuth sublimate gr. xxx. with ½ gr. opium, as well as hot applications to the abdomen, were given. Little or no relief was experienced from this, and he died about 8 a.m., judging from the general symptoms, of cardiac failure.

The second case was another alcoholic. On the morning of the 20th he took three ounces of paris green. Immediately upon taking it he started for the hospital, and rushing into the office told what he had done. He was already being purged from its effects. About half an ounce of dialyzed iron was given to him immediately, as well as some zinc sulphate, until he vomited freely. He was then transferred to the ward and doses of zinc sulph. 30 grains were repeated until in all about 180 grains had been taken; no dose was administered until the previous one had produced free vomiting. At the end of each act of emesis he ejected large quantities of an intensely green substance. In addition to the emetics we administered both dialysed and oxide of iron. At 3 o'clock that afternoon he passed by the bowel some green substance which was considered to be paris green. On the 21st he seemed considerably better. On the 22nd the temperature went up to 100°, the heart became weaker, and he became very restless. Through the latter part of his life he was constantly retching. Later he developed an intense congestion of the fauces, which interfered with swallowing. He died at 10 a.m. on the 25th, or about five days after his admission.

Report of the Committee Appointed to Draw Up Rules for the Prevention of the Spread of Tuberculosis.—Dr. Adami read the report, as follows:—

REPORT OF THE SUB COMMITTEE APPOINTED BY THE MEDICO-CHIRURGICAL SOCIETY TO DRAW UP RULES FOR THE PREVENTION OF THE SPREAD OF TUBERCULOSIS.*

In one or other of its many forms, whether as consumption or lung phthisis, as abdominal phthisis or tubercular peritonitis, as brain disease, as scrofula, as lupus (of the skin), or again as tubercular joint and bone disease, the condition of

* This Report has been drawn up in connection with the Société de Médecine Publique de Montreal, and the Committee of that Society appointed [illegible] Societies.

tuberculosis carries off more human victims than any four other diseases combined. Slow in its progress as a rule, though at times of frightfully rapid course, it is man's most powerful and relentless enemy.

But happily it is an enemy whose tactics and whose plan of campaign we have mastered during these last ten years, and if medical men have not yet learnt how to make sure of defeating it when once it has made an entrance into the human body, this at least they have learnt, how to guard against that entrance.

We know now from Koch's great discovery that consumption and all the other forms of tuberculosis are brought about by a minute rod-like body, the Bacillus of Tuberculosis—a minute body which when once it gains a foothold in the lungs or any other part is only with great difficulty killed, for it is very tenacious of life, and by its growth and multiplication, and by the substances that it gives off in the course of its growth it causes the fever, the wasting, and the other symptoms associated with the malady.

The peculiarity of these bacilli is that under ordinary conditions they cannot grow outside of the bodies of warm-blooded animals, such as man and cattle. It follows, therefore, that tuberculosis can only arise from a previous case of tuberculosis, the bacilli that have grown in one body are taken into another and so infect it. This first body may have been that of a human being or, as is often the case, of a domestic animal. For the domestic animals are liable to tuberculosis, and of these the cow is most often the cause of infection, through the fact that its teats and udders not unfrequently become tubercular; consequently the milk may contain the bacilli. Now as the milk is given to children unboiled or unscalded the living bacilli pass into the bowel and there set up abdominal disease.

In those grown up, the lungs are the usual starting point, that is to say, the bacilli are taken in with the air that is breathed. How do they get into the air?

If these bacilli will not grow outside the body they are, on the other hand, as we have remarked, very tenacious of life. They can remain alive and in a dormant state for months, if not for years. And the conditions under which they keep

alive are (1) that they are in a dried state; (2) that they are not exposed to a very great heat; (3) that they are not exposed to bright sunlight.

From what we have said it follows that while the bacilli may pass directly from individual to individual, and the disease be communicated by contact (such contagion is rather rare) the disease may also be set up *by the breathing in of the dust of rooms in which there have been those suffering from consumption.* Where the lungs are affected, as every medical student knows from his work in the hospitals, thousands of those little rods may be brought up with the sputum each time the patient expectorates on the floor, and the sputum dries there, or even if he spits into his handkerchief and this dries, in either case so much dry dust containing live bacilli is produced, and this collecting on the walls or in the dark corners remains for long a source of possible infection for other people.

Let us give some examples which will prove the reality of what we have said:

In Germany the nursing of the sick in hospitals is largely carried on by religious sisterhoods and brotherhoods, and when in Germany out of every hundred deaths in the ordinary population, between twenty-three and twenty-four are due to tuberculosis, it follows that in general hospitals a very large number of the patients must be tuberculous, and that the nurses must necessarily and continually be coming into contact with the disease. Now Dr. Cornet has carefully examined into the statistics of thirty-eight of these nursing confraternities during a period of twenty-five years, examining the causes of over 4000 deaths, and of this number *out of every hundred nurses over sixty-two died from tuberculosis*, or to put the matter in another light, he found that while between eighteen and fifty years of age never less than half of the nurses died of consumption, etc.—at certain ages (35 to 50 for example), nearly three-quarters of them fell victims to this disease. Indeed, as Dr. Cornet showed, a nurse in Germany at twenty-five stands in the same position as a woman of fifty-eight, not a nurse, with regard to prospect of life.

Equally clear evidence of the communicability of phthisis to those living with, or in the same house with phthisical

patients is given by Dr. Flick of Philadelphia, who mapped out every death that occurred in a single ward of that city during a period of twenty-five years.

He found th : during the period in question less than one-third of the houses in Fifth ward had been the seat of a death from tuberculosis, but that the infected houses were not scattered irregularly among the others, but were more frequently in groups, just as is the case in epidemics of small pox, typhoid, and diphtheria—an arrangement pointing to the spread of the disease from a patient to those in his immediate neighbourhood. Moreover, a large portion (33 per cent.) of the infected houses presented more than one case, and some had been the seat of seven or eight deaths from this one cause during the five and twenty years. Taking the deaths from tuberculosis in one year alone, Dr. Flick found that in this one ward of Philadelphia considerably more than half the deaths from tuberculosis occurred in those houses which had been affected during the previous twenty-five years. Now, inasmuch as there were more than twice as many unaffected houses in this ward as there were affected we should have expected that the deaths would roughly have been twice as many in these unaffected houses. That would have been the proportion had he been dealing with heart or liver disease, for instance. That the proportion is reversed is only to be explained by the infectious nature of the disease.

Tuberculosis in the form of disease of the lungs, the bowels, and of the membranes of the brain is a most frequent cause of death in children. Of every thousand living beings twenty-four die of tuberculosis during the first year of life; indeed during the first two years of life according to one competent observer, out of every hundred deaths nearly forty are due to tuberculosis [this in North Prussia]. That this high death rate is largely brought about by the surroundings of the children, by their living in tubercular homes with consumptive relations, is shown by the statistics of orphan asylums. At Nuremberg, where the orphan asylum has four hundred inmates, only two or three deaths ascribed to tuberculosis have been recorded during eight years. At Paris the results are even more striking. There the *Assistance Publique* adopts all abandoned and orphan children and sends them into the

country, finding healthy homes for them among the peasantry. A very large proportion of these orphans are the children of consumptive parents, one or both of whom have died in the hospitals. Yet examining the statistics of 10,000 such children Dr. Hutinel could only find the insignificant number of ten deaths recorded as being from tubercular affections.

If this be the case—if phthisis be communicable, and if, in a very large proportion of cases, the infection is due to the entrance of bacilli into the air passages in the form of dust—then knowing these facts it is in the power of the phthisical patient and those around him to lessen greatly the chances of other human beings becoming infected through him. And the following rules are worthy of the earnest attention of every right-minded patient and his friends.

It is of most urgent necessity that for the common good they should be carried out with the utmost rigour.

Rules to be Observed as to the Surroundings of those Suffering from Consumption or Tuberculosis of the Lungs.

1. For the safety of those around him the patient should only expectorate into cuspidors, and when not bedridden he should carry a pocket spit-cup for use whenever in the house and places of public resort where there is no cuspidor available. A simple bedroom cuspidor can be made out of a cup kept for this purpose alone, and half filled with water.

2. To make sure that their contents do not become dried up and so carried off as dust the cuspidors should contain water. Their contents should be poured daily in the sewer or cesspool (where the bacilli are soon destroyed).

3. Where the patient is up and about, and cannot employ cuspidors, handkerchiefs must be used, which are changed frequently, and placed in boiling water so soon as they are done with.

4. The soiled handkerchiefs and bed linen of such patients must be kept apart from those of healthy persons, and must be well boiled in the process of washing.

5. Unless the position of the patient render this an impossibility (and in this case, for the safety of the family, he should enter a hospital) the patient must sleep alone—preferably in a room by himself.

6. Whether the patient is up and about, or whether he is confined to bed, the following points should be attended to with regard to the bedroom :

(*a.*) It should be sunny, well ventilated and free from dark corners.

(*b.*) All articles which collect dust should be removed—any carpet present should be replaced by floorcloth. The curtains, if any, should be of light washing material and should be washed frequently in boiling water.

(*c.*) The walls should be whitewashed, or covered by material that can be rubbed by damp bread or damp cloths.

(*d.*) The floor, and the room in general should never be dry dusted, but should be cleaned by damp cloths, so as to prevent the dust flying about.

(*e.*) After the death of a patient suffering from phthisis the room and bedding should be most thoroughly disinfected. The walls should be given a new coating of whitewash, or may be repapered only after all previous coats of paper have been well dampened and then scraped off. The bedding and clothing of the deceased should be disinfected in the dry steam disinfector; where possible they should be destroyed.

Lastly, a few words may be said with regard to these rules and their application. Every care is to be taken that in carrying them out the comfort of the patient, both in mind and body be affected to the least possible extent. It must not be thought that they are intended to lead to the cutting off of the patient from his relations and friends. On the contrary, their adoption will prevent the necessity of any such a course, and here we may point out that the general opinion of the medical profession, based upon many observations, is that the breath of consumptive patients is not infectious: *the sputum or expectoration is the great bearer of disease.*

Undoubtedly there are very many persons who are placed continually in the way of becoming infected and who nevertheless keep in good health—but these are persons of strong constitution, of healthy habits of life, and who generally will be found to take plenty of exercise whether willingly or of necessity in the open air. Undoubtedly also, there are very many persons who become affected, but in whom the disease comes to a standstill, thanks to a bettered state of general health. All this, while deserving to be borne in mind does not, however, lessen the necessity for the rigorous application of the above rules, which are intended for the safety and well-being, not so much of the patient himself, or of the robust and vigorous, but of that large mass of the population always on

the borderland of ill-health—of those whose protection should be our first care—the women whose life is spent in the house (with little active open-air exercise), or in confined workrooms, and the little children—of those also among workingmen whose time is largely spent in the company of their fellows in workshops and factories.

There is another side to the question of the prevention of tuberculosis to which we feel it incumbent upon us to refer, even if it be but briefly, namely, the duty of those not affected by the disease, to make the surroundings of themselves and of those dependent on them so healthy that the chances of infection are reduced to the smallest. It is the bounden duty of employers of labour, as it is to their advantage, to see that their workshops are healthy, and that consumptive workmen do not expose their fellow labourers to infection: it is the bounden duty likewise of heads of schools to exercise extreme caution lest one child suffering from a constant cough, for example, distribute consumption to his or her companions in the school room or dormitory. And in this connection we would point out that inasmuch as the children of consumptive parents would seem especially liable to become affected, so it behooves those having charge of such to be more than ordinarily careful that the general health is kept at a high standard, that they have nourishing food and much open air exercise. In these children the first signs of any of the numerous forms in which tuberculosis may manifest itself (mentioned by us in our first paragraph) must be diligently looked for and guarded against.

While it is well in a town to have an efficient fire brigade, so that if a fire break out, that fire is prevented from spreading, it is even better to have the houses in the town rendered fire proof in order that the danger to the community in this respect be brought down to the lowest possible limit. At present, with reference to consumption and tuberculosis, it must be admitted that our human houses are so inflammable that the establishment of a fire brigade, such as that shown forth in the above rules, is a matter of urgent necessity for the good of the community at large. While here we point out that individual tenements can, as it were, be made relatively fireproof, it is to the prevention of conflagration—of the spread of tuber-

culosis when once it has manifested itself—that now we would specially draw attention.

We recognize the difficulty that must always exist among the very poor in the carrying out of rules of health and of prevention of disease. This very fact makes it all the more necessary that, for the well-being of the population at large, the care of the diseased poor be made more widely than ever the peculiar concern of the state and of each district forming a portion of the state. By the erection of special hospitals or by the setting apart of particular wards of general hospitals for the purpose of receiving the consumptive poor much would be done to prevent the spread of this scourge of humanity.

In behalf of the Montreal Medico-Chirurgical Society:

James Stewart, M.D., *President.*
D. McEachran, D.V.S.
A. D. Blackader, M.D.
Louis Laberge, M.D.
J. G. Adami, M.D.
Wyatt Johnston, M.D.

In behalf of La Société Médecine Pratique de Montréal:

A. T. Brosseau, M.D., *President.*
E. P. Lachapelle, M.D.
H. E. Desrosiers, M.D.
J. J. Desroches, M.D.
L. J. V. Cleroux, M.D.
O. F. Mercier, M.D.

Copies of these rules may be obtained by applying to the Secretary of the Montreal Medico Chirurgical Society, 2426 St. Catherine street, Montreal.

Dr. A. D. Blackader moved that the report be adopted and printed for circulation.

Dr. Hingston thought that the practical suggestions in the middle of the paper were admirable, but there is at the very outset laid down a principle which may not be universally adopted, and which, for the public, is certainly not necessary. It is that in every case of tuberculosis the tubercle must have

been obtained from some pre-existi ng case where tubercle was present, and in that way alone. This question is a very large one and, as yet, a very debatable one, and a great deal may and has been said to modify that view. What, for instance, becomes of those experiments of Cruveillher, with which you are all no doubt familiar. In the healthy rabbit taken from the field he induced tuberculosis and caused its disappearance at pleasure. He caught them, confined them in a dark, damp place, and tubercles were developed. This he proved by killing several of them one after another and finding them in different stages of phthisis. Others, again, after they had shown symptoms of the disease, he liberated, and after they had been at liberty for some time he recaptured them, and examination showed that one after another the tubercles were being eliminated. Now, if tubercle is always due to the existence of tubercle bacilli in others, where did the healthy rabbits get the bacilli? Or were the bacilli responsible for the mischief in the imprisoned rabbits? That is impossible to say, as in the days of Cruveillher the bacillus was not recognized as the cause of tubercle, and even at the present day it is not universally recognized as the cause, while some think it the result.

In joint affections, and of these he spoke with more confidence, we commonly find the healthy child of healthy parents afflicted. On enquiring as to the previous health of the patient, we frequently get the answer, "Yes, the healthiest of my children." Then there is a history of an injury some time previously; the child, in the act of running or climbing, fell and injured the knee, the hip, or the sacro-iliac synchondrosis perhaps, as the case may be. An inflammation follows in the injured joint, and this inflammation is said to be due to the bacillus, rather than to the clearly recognized fall or injury! Where does this healthy child get the bacilli from? It is true that in the course of time tubercles may develop; but have we the right to say that they do so as the result of the child being brought in contact with the tubercular disease, rather than as a result of perverted nutrition? From time immemorial, inflammatory affections of this kind were treated, and generally without benefit, as strumous; it is only since they came to be recognized as inflammatory and the result of

traumatism that treatment has become successful. This is one of America's great contributions to surgery.

Moreover, is it as yet quite settled whether the bacilli develop themselves in the course of the disease, or whether they already exist in the system, and manifest themselves only in the injured parts? In joint affections it is certainly not generally admitted that the bacilli are the cause. Cases sometimes occur where the origin of the disease is supposed to be due to some depression of the vital energies of the part, consequent on over-work or injury, inducing a condition where we should look rather for the spores of inflammation than for the bacilli of tubercle. Even now the latter are by some supposed to contain the former.

He fully endorsed all the other points of the instructions to the public : those relating to ventilation, cleanliness, etc., but thought we should stop there, and not say needlessy that which we will often find difficult to substantiate clinically, and which is unnecessary in a set of practical instructions intended for the public.

Dr. Adami, in reply to Dr. Hingston, said that this subject is an enormous one, and one that at this late hour of the evening it will be impossible to go into in detail. While he could not now enter into all the evidence showing that tubercle is always obtained, directly or indirectly, from pre-existing tublercle, this, however, he would say, that in every case of typical tuberculosis if one takes a piece of the diseased tissue, be it lung or joint, and inoculate it into a guinea-pig, he will have set up a typical tubercular inflammation in which bacilli shall be found. In regard to the experiments of Cruveillher, they are on a par with those kindred investigations where it was shown, or supposed to be shown, that tubercles could be produced by the injection of particles of dust, or inoculating with bits of paper, string, etc., and of all these only the one thing need be said, viz, that they were made before the discovery of the bacillus, before the bacteriological method had come into use in such investigations, and as such they are imperfect and, he thought, must go by the board. In fact, it is highly probable that the inflammation which these men set up was not true tubercular inflammation at all, and therein lay their mistake.

In laying down the principle alluded to we are acting in accordance with the views held by the leading minds of France, of Germany, of England, and he did not think there was in England to-day a single man of scientific note who disbelieves in the bacillary origin of tuberculosis, and further still, we are acting in accordance with the views held by the majority of this Society.

As a reason why every case of tuberculosis must be derived from some previous case of the disease, he might say that the more one examines the habits of life of the tubercle bacillus the more certain one becomes that they will not grow at a temperature but three or four degrees below the blood heat, even if they be cultivated upon specially prepared broth. Now, the temperature of an ordinary room is always considerably below that point, and consequently bacilli could not propagate or manage to survive beyond a certain time in such a medium, and so we may infer that wherever a case is found it must have originated from a preceding case. In fact, Dr. McEachran pointed out that the disease was not confined to man, but that it existed and was prevalent amongst animals. It is one of the four great scourges of the bovine race. In joint diseases, therefore, we must not be content with looking for previous disease in other members of the family, but we must also investigate the meat supply as well as the milk of these people.

Dr. Girdwood said that supposing the person does not contract the disease from some preceding case, man or animal, how, then, does the tubercle bacillus become developed, unless by spontaneous generation, which at the present day cannot be admitted.

Stated Meeting, May 12th, 1893.

James Stewart, M.D., President, in the Chair.

Large Scrotal Hernia.—Dr. Armstrong brought before the Society a man suffering from an enormous hernia. It had been gradually increasing for the last twenty-four years; a truss had never been worn. The sac seemed to contain the greater part of the small intestines, and the ring was large enough to admit the fingers to the knuckles. Dr. Armstrong intended to transplant the cord and close the opening.

Dr. SHEPHERD referred to a similar case upon whom he had operated several years age. The sac contained all the abdominal contents, except the stomach and rectum. The testicle, which was cystic, was removed, and the canal completely closed. There has been no return.

Macroglossia.—Dr. SHEPHERD showed an infant of six months suffering from an extreme degree of macroglossia. The tongue projected about two inches from the mouth, and great difficulty was experienced in feeding the infant. He proposed to remove the tongue with the ecraseur.

Poisoning by Sulphate of Copper.—Dr. WYATT JOHNSTON exhibited the stomach of a man aged 28 who had committed suicide by drinking nearly a quart of a saturated solution of sulphate of copper from a battery jar in the electric works, where he was employed as a night watchman. Death occurred in an hour and a half. The stomach and intestines had externally a leaden-blue colour, and contained a large amount of pale grayish-green flocculent fluid. The mucosa had the appearance of having been tanned, and was stained a deep green colour. Chemically, the contents of the stomach were found to consist of basic or sub-sulphate of copper. Heart muscle and liver parenchyma looked opaque and grayish. No examintion for copper was made of these organs.

Dr. W. F. HAMILTON said that the patient had been admitted to the General Hospital shortly before death. Large quantities of warm water and mustard failed to produce emesis. He seemed to suffer from extreme pain and difficulty of respiration, owing to a quantity of mucus in the throat. Extremities were cyanotic; superficial capillaries were markedly dilated. There were some mucous and watery stools.

Dr. MILLS asked if there was any evidence along the course of the vessels and lacteals to indicate whether the salt had been absorbed into the blood.

Dr. JOHNSTON replied that there were no signs to indicate that absorption had taken place; no naked-eye changes in the blood.

Localized Tuberculosis of Ascending Frontal Convolution.—Tuberculosis of one Suprarenal.—Dr. Adami exhibited the drawing of a brain recently removed by him, presenting a peculiarly rare localized tubercular lesion, affecting the centres for the movements of the upper limb and neck of the left side.

The patient, a woman of 28, phthisical and a morphine maniac, a patient of Dr. Stewart at the General Hospital, had for two days before death suffered from repeated attacks of an epileptic nature, in which there were convulsive movements of the left upper extremity and the neck, so that the head became pulled down to the left and the face turned partly to that side. These movements were executed with great rapidity, as many as 145 contractions of the extremity being recorded per minute.

At the autopsy there was found old phthisis of both apices, and extending from there a condition of acute tubercular broncho-pneumonia, miliary tubercles of relatively large size being scattered all over both lungs. Both the kidneys and the liver presented similar tubercles, while the medullary substance of the right suprarenal contained caseous tubercular foci of large size. The left suprarenal had a grey softened medulla, but was not tubercular.

A condition of great interest was exhibited in this brain. Careful examination and section revealed no tubercular affection save at one spot—an area a little over half an inch in diameter, situated upon the right ascending frontal convolution, at either apposed side of a fold forwards in that convolution, at the level of the sulcus which separates the superior from the middle frontal region of the brain. Here miliary tubercles surrounded the surface vessels, and the tubercular process extended along the sheaths of the branches given off from these and formed small wedge-like masses, passing through the grey to the outer surface of the white matter. Dr. Adami pointed out a tubercular lesion of such small dimensions affecting so distinctly one group of associated movements was almost, if not quite, unique. He called attention to the fact that this case supports Ferrier's conclusion reached by experimental research that the area for the movements of the neck passes backward to the ascending frontal, and overlies or intermingles with the areas for movements of the upper extremity.

Recto-ovarian Fistula.—The same case presented another rarely recorded condition. Upon removal of the pelvic organs *en masse*, it was found that both ovaries were situated low down in the cavity, and were there bound to the vaginal end

of the uterus by firm old inflammatory adhesions. They were fibroid and contracted. The fallopian tubes curved downwards to them and did not present such extensive evidence of inflammatory disturbance. It is to be noted that the left tube was not at its extremity in close attachment to the ovary.

Upon attempting to cut away the left ovary a fistulous track, containing foul-smelling contents, was opened, and upon passing a sound into this, it emerged into the rectum at a point about $3\frac{1}{2}$ inches above the anal orifice. The ovary lay curved over the blind end of this fistula, which was $1\frac{1}{2}$ inches in length. There had been so much inflammatory change all around the fistula, that it was not possible to recognize microscopically anything but firm fibrous tissue in this region; however, macroscopically, the rather thin upper wall of the fistula, seen from above, was in direct connection with and indistinguishable from the rest of the ovary, while, clinically, there was the history of acute ovarian disturbance several years previously. Hence it may safely be inferred that this was a true recto-ovarian fistula.

Not a few cases of tubo-ovarian abscess bursting into the rectum are on record, but here the tube was not implicated, and Dr. Adami held that the fistula could only be explained as the consequence of an acute suppurating oöphoritis or perioöphoritis with rupture into the rectum. The patient had complained of no recent ovarian or rectal trouble; the fistula, as its walls showed, must have been of long standing.

Dr. William Gardner had never met with a condition of recto-ovarian fistula as described. Ovarian abscess without involvement of the tube is extremely rare.

Dr. Stewart said that the case was unique as a demonstration of the location of the motor areas.

White Sarcoma of the Retina.—Dr. Buller exhibited the specimen and gave the history of the case. The patient, a woman, aged 49, had a subacute glaucoma of some standing in the right eye. A year and a half ago she became suddenly blind. The other eye was absolutely healthy, so he had come to the conclusion that this was not a case of ordinary glaucoma, but that the blindness was due to some cause antecedent to the glaucoma. The lens had become quite opaque, thus precluding ophthalmoscopic examination,

and making the diagnosis difficult. He, however, counselled enucleation, which was done. On making an equatorial section a round growth was seen on the fundus, which proved to be a white sarcoma, a condition of great rarity. The rest of the eye was in a fairly healthy condition; the detachment of the retina had not become complete.

Thoracic Empyæma.—Dr. ALLAN read a paper on this subject, dealing with the surgical treatment.

Dr. SHEPHERD thought that ordinary cases following pneumonia got well after aspiration. But in cases where incision into thorax, with removal of one or more ribs, is performed, the operation gives great satisfaction. He never washes out the cavity except when the pus is fœtid, as he considers it unnecessary to introduce foreign matter.

Dr. MCGANNON said that there was a great difference of opinion about washing out the cavity. Some say that the procedure causes shock, but he thought shock might be due to hæmorrhage. A weak solution of peroxide of hydrogen could never do harm, and might be of great service.

Dr. STEWART had recently seen three cases of pneumonic empyæma, and none had been successfully treated by aspiration.

Stated Meeting, May 26th, 1893.

DR. JAMES BELL, 2ND VICE-PRESIDENT, IN THE CHAIR.

Dr. ARTHUR BEERS was elected a member.

Exophthalmic Goitre.—Dr. J. B. MCCONNELL presented before the Society the patient, a woman 45 years of age, married 25 years, 4 children, the youngest being 5 years. The trouble began in the summer of '91, when she began to suffer from a spasmodic cough, which seemed to arise in the throat, and was associated with a great deal of palpitation. During the winter following she got rid of the cough, but the palpitation grew worse. During the summer of '92 the palpitation was so bad that she could scarcely lie down. She noticed the swelling of the thyroids first about Christmas, '92, and they have grown gradually larger ever since. In the spring of '92 she first observed some brown pigment spots on different parts of her body; since then they have appeared on the hands, the

shoulders, the inner sides of the thighs, and somewhat less marked on other parts of her body. Associated with these pigment spots are patches of leucoderma. The exophthalmos is not as yet very well marked; it is becoming more so, however, seeming to be following the other two cardinal symptoms. She has also suffered from marked tremor, which has been a little better of late, several days' rest seemingly having rendered it quieter. Her pulse ranges from 90 to 120, and is very irregular.

Examination shows the heart to be considerably enlarged; the apex beat is considerably to the left of the normal point.

It is a very typical case of Graves' disease. The pigmentation, however, does not appear to be a very common complication. In Pepper's system of medicine it is not even mentioned; Osler, however, speaks of it as one of the complications of this disease.

There is no anaemia, although she is emaciated and somewhat pale; the corpuscles number 5,200,000 to the cubic millimetre.

Dr. Adami remarked that pigmentation was very common in the cases of this disease he had seen, in a country where Graves' disease appeared to be particularly common, Lancashire. It was looked on there as the fourth cardinal symptom. Pigmentation is interesting as showing the nervous nature of exophthalmic goitre, and brings it into relation with more than one disease in which there is some affection of the sympathetic system. Addison's disease is another of these.

Dr. Lapthorn Smith extolled the use of the galvanic current in the treatment of the disease, comparing it to quinine in malaria and mercury in syphilis. He cautioned moderation in the turning off or on the current, remarking that the sympathetic nature of the trouble is shown by the tendency of the patient to faint or turn pale under even the slight shock thereby incurred. A single sitting often reduces the size of the tumour quarter of an inch. A lady afflicted with this trouble, and in whom the tumour is so large as to obstruct breathing, had been accustomed to come to him yearly for several years, just to have it reduced, it growing again in the interim. The strength of the current used varies from 10 to 15, and rarely up to 20 milliampères. No puncture was ever

made, simply an electrode large enough to cover the surface, and to effect this it is better to make it concave. Clay or absorbent cotton answer very well for its manufacture.

Dr. KIRKPATRICK related the history of a case where the galvanic current had been used with results corresponding to those of Dr. Smith. The patient usually stood 10 milliampères, commencing with 5, and gradually increasing. In the *Medical News*, a few months ago, a case was mentioned where the Faradic current had been used with equally gratifying results. On the other hand a case occurred in the General Hospital some time ago, where the constant current had been used without any result. Probably, after all, it is only in a certain number of cases where it is of use.

Dr. MCCONNELL asked on what principle galvanism is used in this disease. The enlargement of the thyroid is a secondary phenomenon. It seems to begin in some affection of the sympathetic, a vaso-motor paralysis localized to a certain extent; in this way the heart is primarily affected. Goitre and other symptoms seem to be secondary and not essential, from a causative point of view. Have they applied the current with a view to reduce the enlargement, or has the sympathetic been galvanized?

Dr. L. SMITH thought galvanism acts as a powerful tonic to the sympathetic. He believed that the beginning of the disease is a paralysis of the vaso-motor nerves in the thyroid, resulting in a hyperæmia of that gland. Galvanism acts by renewing the tone to these vessels, and the fainting, etc., which are observed to follow a too sudden application of the current, are due to the too rapid tightening of the sympathetic in the brain, the blood being thus temporarily cut off.

Cases of Cystic Diseases of the Ovaries.—Dr. ADAMI had recently received for examination a very interesting series of cases of disease of the fallopian tubes and ovaries, and brought some of them before the Society in order to invite discussion upon the subject of ovarian cystomata.

Case I. *Chronic Salpingo-oöphoritis.*—The two tubes and ovaries exhibited were obtained by Dr. Alloway from a woman aged 38 years, who had been married 11 years. She had been twice pregnant, the last pregnancy occurring 11 years ago, when there was evidence that she suffered from

septic peritonitis. Upon examination before operation the uterus was found contracted, the ovaries and tubes enlarged, fixed and acutely tender and painful upon pressure. Dr. Alloway operated upon May 22nd, and upon exposing the parts found extensive delicate veil-like adhesions binding the ovaries to the surrounding organs; firmer adhesions bound the ovaries to the outer ends of the tubes. These numerous adhesions complicated the removal.

Left ovary and tube: The tube was tortuous and ¾in. in diameter. The walls appeared firm and greatly thickened, but upon section the reverse was found to be the case, for the tube was greatly dilated and thinned in its outer half; the smaller and narrower proximal half alone showed thickening of the walls, while the dilated region was filled with thick, almost solid, inspissated pus, which presented no cell structure, but only granular and fatty débris. There was almost complete stenosis of the uterine extremity of the tube; the ovarian extremity was completely occluded and was distended, all indications of the fimbriæ having disappeared. Upon the outer wall of the tube close to the ovary, there was a small white body of the size of a No. 12 shot; this, when opened, was seen to be a cyst filled with similar inspissated cell débris, but unconnected with the lumen of the tube. The ovary, which was of fair size, presented in the substance of its inner half a cyst as large as a pea. This possessed a well-marked capsule, and was filled with similar fatty cell débris. Apparently this was the remains of an enlarged and suppurating Graaffian follicle. The outer half of the ovary was almost entirely formed of a corpus luteum, with thickened sinuous walls and firm central area containing blood pigment.

The right tube presented a condition similar to that of the left. It was enlarged and tortuous, and its occluded extremity was adherent to the ovary. There was the same almost solid cheesy material filling the thinned and distended outer half; no trace of the fimbriæ could be determined, either externally or coiled within the tube. Immediately below the tube and to its outer end was a cyst with contents similar to those of the tubes and cysts already described. The outer wall of this cyst was in direct contact with the ovary, and it was a question as to whether this was of ovarian or ligamentous origin.

The ovarian tissues could not be traced into its walls, and this, together with the position, favoured the latter view. The right ovary, like the left, contained a small cyst filled with cell débris and an old corpus luteum, and neither attained to the dimensions of those in the left ovary.

The well-formed veil-like adhesions, the nature of the contents of the tubes and abscess cavities, the complete disappearance of the fimbriæ, all indicate a peculiarly long-standing condition, as also did the history and sterility of eleven years' standing, but the most instructive feature of the case is the series of cysts here presented, for these masses of semi-solid fatty material, surrounded by definite capsules, may quite rightly be described as cysts. Clearly there had been a tendency towards the formation of chronic suppurative foci, not only in the tubes and ovaries, but also around them, so that we have cysts of inflammatory origin (1) in the ovaries themselves, starting in the corpora lutea, (2) in the broad ligament, (3) upon the outer wall of the fallopian tube, and (4) in the fallopian tubes; for these have become occluded, and each with its lumen distended by old inflammatory products, may be looked upon as cystic.

Case II. *Pedunculated Sub-peritoneal Fibro-myoma: Cystic Graaffian Follicles.*—Here was a sub-peritoneal fibro-myoma attached to the posterior portion of the uterus by a ligamentous membrane, which allowed it to be quite distinct and separable from the uterus. The ovaries in this case also showed evidence of disease. The right one was of fairly normal size; on section a cavity with a sinuous wall was seen; this cavity is certainly nothing other than a large corpus luteum which has undergone cystic degeneration and is now being absorbed. So that here is another form of cyst of the ovary. In the last specimens we had to do with a cyst which resulted from the suppuration of a Graaffian follicle or corpus luteum; in this one we have a corpus luteum which, instead of undergoing its normal course of enlargement, followed by atrophy, has increased abnormally (it was at least 30 millimeters in diameter). The blood first poured out had become absorbed, and was replaced by a fairly clear fluid, and only now, judging from the sinuous capsule, was absorption taking place. The left ovary in this case showed two other cystic condi-

tions. One appeared to be a comparatively recent corpus luteum, the blood pigment still being in it, with little crystaline masses of hæmatoidin, the centre being a clear cystic space. The second was a simple cyst partially filled with semi-solid broken down cell matter, the rest of the cavity being filled with clear fluid.

Case III. *Multilocular Ovarian Cyst of Great Size : Cystoma Proliferum Glandulare.*—This case, sent by Dr. Gardner, is interesting on account of its great size, and from the fact that upon first sight it appeared to be one huge single cyst, completely filling up the lower abdominal region. There were, however, towards the lower and hinder portion a few small cysts connected with it, corresponding, it would seem, to the region of the original ovarian tissue, and upon the anterior wall could be felt three or four hardened areas, or "plaques," the largest being several inches in diameter. Upon opening the large cyst and removing the mucoid material contained, these flattened plaques could be seen projecting slightly into the interior. The specimen had been sent in order to determine the nature of these thickenings of the wall.

Waldeyer has divided the ovarian cyst-adenomata into two classes, which, it must be admitted, are not sharply separated, for a very large proportion of ovarian cysts, if carefully studied, must be placed under both of his headings. These are: (1) that of the "cystoma proliferum papillare," in which the connective tissue of the wall of the mother cyst undergoes great proliferation, forms papillomatous projections, and the papillæ, covered by a layer of epithelium, and coming into contact here and there, form thus the secondary cysts; (2) In the second class, or that of the "cystoma proliferum glandulare," it is the columnar epithelium lining the mother cyst that is the more proliferous, and that dipping down into the underlying connective tissue, there form follicles, which, becoming occluded, develop into the secondary cysts. Now, the plaques in this specimen, when examined microscopically, are seen to be composed of a relatively small amount of fibrous stroma, enclosing very numerous small follicles and cysts lined by a single layer of columnar epithelium, tending to invade the capsule of the mother cyst. Hence to this extent the tumour must be classed as an adeno-cystoma of the glandular type.

We have, therefore, in the series of examples brought before the Society, a not uninstructive series of the main forms of cystic growth in the ovary, the dermoid cysts alone being deficient. We have the Graaffian follicle, which, owing, it would seem, to coincident inflammation in and around the ovaries, forms a corpus luteum of great size and aberrant course, becoming either the seat of inflammatory change itself, so that the cavity contains eventually broken down cell material, puriform débris, or again becoming a cyst of moderate size filled with clear fluid. And again, we have a very fair example of the form of multilocular ovarian tumour of the more important type clinically, with regard to whose etiology there is still divergence of opinion

Are the multilocular ovarian cysts, the cyst-adenomata, also developed, like the simple cysts above described, from Graaffian follicles, or have they another origin? The fact that the columnar epithelium lining them is of a simple type, that they and the tumour which they form are of an embryonic type, and that coincident with this more or less embryonic nature the tumours are of fairly rapid growth and incline towards malignancy, are, on the whole, against the view that they develope from mature Graaffian follicles. And with Waldeyer and Malassez it is generally held that they are developed from an earlier stage: that just as the Graaffian follicles themselves originate from processes or follicles growing inwards from the epithelium covering the surface of the fœtal ovary, so these tumours arise from similar ingrowths in later life; and Malassez has seen such ingrowths from the surface, resembling a cylinder epithelioma. On the other hand, Ritchie states that he has observed the ovum or its remnant in the smaller cysts of a multilocular tumour, and these smaller cysts, like the Graaffian follicles, have limpid contents; while Galabin has seen processes similar to a cylinder epithelioma starting from Graaffian follicles, and not from the surface. There is, it appeared to Dr. Adami, no inherent improbability that the adenomatous growth should start from the adult (glandular) follicles, just as adenoma or carcinoma of the mammary gland is supposed to start from adult gland tissue in the mamma.

The matter might seem to be one of minor import, for the same original epithelium is implicated in both cases, the only

question being as to the stage of development reached by that epithelium at the moment when the tumour begins to form. Nevertheless, it is one that has been much discussed, and a series of examples, such as those brought before the Society, might serve to start and illustrate a discussion on the subject.

Dr. ALLOWAY, commenting on "Case I" of the series just discussed by Dr. Adami, said that since her last childbirth, 11 years ago, when she had puerperal fever, she suffered from pelvic pain, so severe as to almost incapacitate her for work; and that this history led him to suspect that she had wholly inflamed and adherent ovaries and tubes, and that there was also pus, possibly in an inspissated condition, in the tubes. He was pleased to find such was the case. In the operation he found great difficulty in separating the adhesions, which, from their density, must have been there for years. He ligated the tubes close to the uterus, where they were not inflamed. Good recovery.

Case II was a subperitoneal fibro-myoma, which is much more common in the negress than in the white woman. The uterus was in ante-version; somewhat enlarged (9 centimetres in depth), but not sufficiently so to produce much hemorrhage. The fact of the tumour being entirely separated from the uterus simplified the operation; it was only connected to the uterus by a ligamentous band, which was covered with peritoneum; in fact, by a sort of meso-metrium. To cause the complete disappearance of all the symptoms, he thought it better to bring on the menopause, and, to do this, adopted Tait's operation—the removal of the appendages. This, where the uterus is not very much enlarged, is adequate, safer, and, therefore, a better operation than total extirpation. The tubes were found, on pathological examination, to be chronically inflamed.

Abdominal Section after Confinement.—Dr. ARMSTRONG read a paper on this subject, as follows:—

Mr. President and Gentlemen,—I have recently had to do with three or four cases which in my experience are not common, and my friend Dr. Perrigo has had to do with one of a somewhat similar character. We think that a brief rehearsal of the principal points will be of interest to the Society, and hope that the discussion will be mutually helpful and instructive.

On the 3rd of March last Dr. W. G. Stewart asked me to see with him a lady whom I had myself previously confined three or four times. Her confinements had always been normal, but her recovevies had not always been as satisfactory as could have been desired. She had generally recovered slowly, had usually had a little temperature, and some soreness and tenderness over the uterus and adnexa, but nothing of a serious character.

Dr. Stewart told me that her last confinement had been a normal one in every respect. She did well afterwards, and got up on the tenth day. In brief, she soon afterwards became feverish, complained of some abdominal pain and soreness, and went to bed. During the next four weeks she had a very fluctuating temperature, an occasional chill, frequent sweats and sufficient abdominal pain to require poultices and opium to relieve. When I saw her, six weeks after confinement, she had a temperature of 101.5, pulse of 130, small and weak, and an anxious expression. The abdomen was rounded and for the most part tympanitic. In the left lower abdominal region a distinct but ill-defined mass was easily felt, which was tender on pressure. I advised an exploratory incision, which was consented to. Before opening the abdomen I curretted the uterus, swabbed it out with a solution of permanganate of potassium and packed with iodoform gauze. On opening the abdomen the omentum was found adherent to the uterus and tube of the left side. On carefully detaching the adherent margin a pus sac was found, the walls being formed anteriorly by the omentum, below by the left tube and ovary, and above by knuckles of intestine. The pus was carefully removed, the tube and ovary tied off, as well as fully one-third of the omentum, which was infiltrated and thickened. The patient made an excellent recovery.

The tube in this case was brightly injected, swollen to probably twice its normal size, but there was not evident any constriction, and it contained no pus.

Case II.—This case occurred in the practice of Dr. J. Perrigo, and I am indebted to him for the report of it. Mrs. S., referred to me by Dr. Tatley, March 11, 1893. Chief points of history obtainable were: Confined five weeks previously of her second child; attended by a midwife; labour

normal. On seventh day developed severe rigour, with temperature of 104° and quick pulse. From this date rigours frequent and temperature continuously high. Great pelvic pain on left side, moderate abdominal distension; occasional vomiting and diarrhœa; prostration extreme. Examination disclosed a tender abdomen, with a large mass in left side of pelvis, a soft patulous "os," with uterus adherent to mass. No fluctuation could be detected. Patient could bear very little pressure on the mass, and any attempt to move the uterus caused intense pain. Patient removed to private ward of Western Hospital on March 12th, and abdominal section performed that day. All aseptic precautions taken on the part of operator, assistants, nurses and instruments. The field of operation also made aseptic.

Before doing the section the uterus was curretted and some decomposed placental tissue removed. This was done very gently, but, notwithstanding the care taken, the fundus close to the left groin was perforated, so soft were the uterine walls. This was discovered when doing the section. It was quite small, and there was no hæmorrhage from it. The uterus was irrigated and packed with iodoform gauze. Upon section the right side of pelvis was found healthy. The contents of the left side formed one mass of inflammatory exudation, all the structures being agglutinated together, adherent to the uterus and to the wall of the pelvis. The lower half of the omentum showed patches of gangrene, and in two small points were attached to coils of intestines, and its left and lower border was adherent to the abdominal wall and to the mass in the pelvis. The omentum was first detached and all diseased portions removed. Great care was required in separating the adhesions from the intestines. No injury to intestines. The tube was enlarged to the size of an average adult's wrist, and contained small pockets of pus. The tubal canal was obliterated. Ovary of normal size and gangrenous.

The tissues were so friable and softened that it was with difficulty ligatures could be applied without cutting. The thermocautery was freely used, but there was not much hæmorrhage. Abdomen flushed and drainage tube used. Before operation patient's temperature was 103 2-5, and pulse 130. Operation was at 4 p.m., and was an hour and a half in

duration. Temperature at 7 o'clock same evening was 99 3-5, pulse 110. Iodoform gauze removed from uterus day after operation.

From this date up to the evening of the seventh day the temperature ranged from 99° to° 100, respiration 18 to 24, pulse 96 to 104. Tube removed on second day, no discharge from it, and incision appeared clean and healthy. On evening of the seventh day temperature went up to 102°, pulse 120, respiration 26, and had a restless night, although passing flatus freely. On the morning of the eighth day temperature was normal and pulse 88, but in the evening the temperature went up to 103 1-5, pulse 120, respiration 28. The incision was examined and appeared healthy, but the evidence of pus being present was so strong that two of the central sutures were removed and about a pint of pus evacuated. The opening in the incision caused by the removal of the two sutures was sufficiently large to pass the finger in. A large pus-cavity was discovered, which had followed in the tract of the glass drainage tube. The cavity was well irrigated and a large tube inserted, which was cleansed every two hours. From this date the patient convalesced steadily, interrupted at times by her own misconduct.

Case III.—Presents a history which in some respects is unique. She was attended during her second confinement by Dr. F. R. England. Her confinement was a normal one in every respect, not unduly prolonged, and the child was born alive and well. Dr. England saw her each of the immediately succeeding nine days. Her recovery was all that could be wished. Her temperature and pulse were normal every day. The lochia was present in sufficient quantity, and at all times free from odour. Her breasts were always full, and the child nursed well. The lacteal secretion was always sufficient for the child. At 4 p.m. on the ninth day after confinement Dr. England paid what he intended to be his last visit. Her temperature and pulse were normal, breasts full, lochia getting scanty and odourless. No abdominal pain or tenderness; it was soft, and bore palpation without the slightest discomfort. She lay in bed with her babe upon her arm, well and happy and hopeful. At 10 o'clock that evening the nurse decided

that her patient's bowels needed moving. As the baby had a little looseness, the nurse thought that an enema was the proper thing to give. The patient objected strongly to this, on the ground that after her first confinement she had had an enema, and that she suffered very great pain for 48 hours afterwards. Her objection, however, was overcome, and the enema was given. She was almost immediately seized with intense abdominal pain, with great general tenderness, and vomiting. She had a small stool almost immediately, and her bowels did not move afterwards. The vomiting persisted and soon became bilious. Hypodermics of opium were given to relieve the pain. The abdomen became tympanitic, the temperature rose, the pulse became rapid and shabby, the face became drawn and anxious, and it was evident that the patient was suffering from some severe lesion, sufficient to cause a condition of collapse. I saw her with Dr. England during the afternoon of the next day. I thought the history and symptoms pointed to some acute obstruction of the bowels, possibly a volvulus. Her condition was an extremely grave one, and it was easily seen that if anything was to be done more than had already been done, it was of a surgical nature. An exploratory incision was advised, and with that object in view she was removed to a private ward in the Montreal General Hospital. There, with the assistance of Dr. Shepherd, I opened the abdomen by a median incision.

The peritoneal covering of the intestines was congested. I think I am within the limits when I say that two pints of thin, pale yellow, odourless pus flowed out. After thorough irrigation, the uterine appendages and appendix vermiformis were examined without finding any condition that was thought to bear a causative relation to the peritonitis. The tube and ovaries were tied off and sent to Dr. Adami, whose report upon them I will read. This woman was moribund when the operation was begun, and died ten minutes after being removed from the table, or just 24 hours from the giving of the enema and onset of symptoms.

The following is Dr. Adami's report:

PATHOLOGICAL LABORATORY, MCGILL UNIVERSITY,

May 17th, 1893.

The Fallopian tubes are rather more capacious than normal

heir epithelium is healthy: the serous layers are congested and thickened.

The ovaries present no suppurative foci: all that can be said of them is that they are more fibroid than they ought to be, possess large tortuous vessels and thickened capsules. Evidently, therefore, the peritonitis has not started from the tubes or ovaries in this case.

Careful search was made for volvulus and hernia, but nothing which could be taken for a cause was found. Thinking that perhaps a small perforation existed along the sigmoid or colon, I asked one of the House Physicians to inject water into the rectum. It entered freely, filled the colon and passed through into the ilium, but none escaped through into the peritoneal cavity. I was obliged to close the abdomen without determining the cause of the pathological condition present. No autopsy could be obtained. From the symptoms of obstruction which were present, and the history of severe pains following the administration of an enema after a previous confinement, I am inclined to think that in some way a volvulus of the sigmoid was produced by the enema which had untwisted, but not before some pyogenic micro-organisms had escaped into the peritoneal cavity. What it was—whether the bacillus coli or one of the proteus group, described by Hauser in 1885, or some other—I cannot say, as unfortunately none of the pus was saved for bacteriological examination.

Dr. Flexner, Associate in Pathology in the Johns Hopkins University, describes in the April number of the *Johns Hopkins Bulletin* a case of peritonitis occurring in a patient, the subject of chronic disease, thought to be due to the action of the proteus vulgaris. In the same paper Dr. Flexner says that Foa and Bonome found in the blood and organs of a man dead of supposed hæmorrhagic infarction of the intestine and mesentery and thrombosis of the mesenteric vein, a bacillus which they identified as the proteus vulgaris.

Case IV.—A patient of my own was attended for me in my absence by Dr. Spendlove, in June, 1892. It was her third confinement; labour easy and rapid; child living and healthy; recovery apparently perfect, no history of any tubal or ovarian trouble. Two months after confinement, while in apparent health and nursing the child, she was suddenly seized with

a severe rigour, rapid pulse, and a temperature of 104, followed by pain and tenderness in the lower abdominal region. She recovered in a week, so far that the pain and tenderness disappeared and pulse and temperature became normal. The lacteal secretion was sufficient for the child, and she resumed her household duties. In fifteen days she had a similar attack, followed in ten days by another; apparently good recovery, only to suffer another recurrence ten days afterwards. The third attack was the most severe of all. In addition to the rigour, high temperature and pain and tenderness, there developed a large, soft, tender mass on each side of the uterus, easily felt by bimanual palpation. I now decided to open the abdomen. On doing so, I found a large tubo-ovarian abscess on each side. It was treated in the usual way, and a rapid and perfect recovery followed. The patient is now in better health than she has been for years.

I might add a fifth case operated on in the General Hospital some two years ago, followed by recovery.

Case III must be considered separately from the rest. The symptoms were those of obstruction. Dr. Adami, in his report upon the tubes and ovaries, says they cannot be called diseased, and that we must look elsewhere for a cause of the peritonitis. The cause was apparently a temporary condition, which had ceased to exist at the time of operation. Remembering the symptoms that followed the administration of an enema after the first confinement, and the apparently causative relation of enema and symptoms at the onset of her last illness, I think that probably, as I said before, a volvulus was produced, which untwisted before we inspected that region, or perhaps it was untwisted while we were looking at the condition of the uterine appendages on the left side.

The two lessons to be learned from the other four cases are, first, the necessity for greater caution against sepsis when attending confinements or miscarriages. The technique of a case of midwifery should more closely resemble that for a modern surgical operation. The greatest care should be taken to render the hands of the accoucher aseptic. His coat and underwear should be above suspicion. The patient's person and clothing and bed should be made as clean as circumstances

will permit. A napkin or towel wrung out of a hot solution of corrosive sublimate 1 in 2000 should be used, instead of the old dry napkin, to support the perinæum. The parts should afterwards be frequently washed by the nurse, who should be impressed with the necessity of having clean hands herself.

Secondly, these cases teach us that, when septic infection occurs, great care should be taken to discriminate between infection from the vagina, torn perinæum, uterine cavity, or torn cervix, and infection extending up and involving the fallopian tubes. The treatment should aim to meet efficiently the pathological condition present. The experience gained from these five cases demonstrates the utility of proper surgical treatment in properly selected cases. No amount of vaginal douching or curretting and irrigating of a septic uterus will save a woman suffering from ruptured pus tubes, with intra-peritoneal inflammation and abscess.

But the history of these cases does show that surgical treatment may not only save their lives, but restore them to perfect health. Thoroughly cleanse and render aseptic the vagina and uterine cavity, and then if there is pus in the abdomen open that cavity, remove the pus and diseased tubes and infected omentum, and make it also as aseptic as possible.

Dr. England, referring to Case No. 3 of the series just reported, had nothing more to add to what Dr. Armstrong had so well expressed. The woman had a very satisfactory puerperal period. The giving of the enema was, or seemed to be, the beginning of her pain, which persisted till death. He saw her the same night as the enema had been given, and even a hypodermic of morphia could not relieve pain.

Dr. Lapthorn Smith dwelt upon the necessity of greater care being exercised by the accoucheur in cleansing the hands, and for this purpose he knew of nothing better than permanganate of potash and oxalic acid.

Relative to Case No. 3, he did not agree with Dr. Armstrong in thinking that a volvulus or obstruction was the cause of the trouble. Two pints of pus in the peritoneal cavity is more than could be manufactured in such a short time, and in his opinion it must must have been locked up somewhere in the form of an abscess, and during the administration of the enema it suddenly burst and flooded the cavity.

Dr. J. C. Cameron said that Dr. Armstrong's series of cases seem to confirm the belief that abdominal section is sometimes useful in local peritonitis, and that it is always hopeless in general septic peritonitis.

With reference to curetting, he said that this should be done before the peritonitis was set up. Where there is a suspicion of any portion of the placental tissue being left in the uterus, we should not treat a rise of temperature with douching. Douching is not sufficient to remove any adherent membranes or placenta; nothing but the curette is sufficient in such cases. Here in Case 2, if the curette had been early used, the necessity for an abdominal section would have been spared. Interfere early and interfere thoroughly was his advice in all such cases.

He was not in accord with Dr. Smith in his absolute faith in permanganate of potash and oxalic acid as disinfectants. He thought it a dangerous doctrine to set forth that the thorough use of those agents on the hands does away with the necessity of any or all other precautions. In the abstract it may be correct to say that thorough disinfection makes previous occupation of no importance; but, in practice, it will be found unjust and unwise to counsel men that they may leave the post-mortem room and confine a woman with impunity, provided they wash their hands in permanganate and oxalic acid. It will be found that disinfection comprises much more than the cleansing of the fingers.

Dr. James Bell thoroughly agreed with Dr. Cameron's remarks regarding the insufficiency of manual disinfection. The truth of this is well seen in the hospital, where students, ever apt to seize upon the most prominent part of the technique, often confine their disinfection to washing the hands, etc., and neglecting other and very essential precautions.

Dr. Armstrong, in reply, said that relative to the Dr. Smith belief that the hands are the only source of infection in midwifery, it has lately fallen to his lot to see three cases, two of them fatal, occurring in the practice of accomplished, faithful, truthful men, who asserted that the children were born before they reached the house; that they never touched the vulva, never made a vaginal examination. Granting that the hands

are the most important part, if you have a dirty field of operation, a dirty vulva; if you have fecal matter coming down, no matter how clean your hands are, you carry over the germs that are on that surface; you must have everything clean.

In regard to Case 3, and Dr. Smith's remarks about the two pints of pus, he said that he had no knowledge of any kind of peritonitis that could be present for nine days and give no symptoms; that, at the operation, puzzled with the obscurity of the case, the incision was enlarged and a most thorough examination of the cavity and its contents made, with a view to find an abscess or some such explanation for the quantity of the pus, but without success. In the face of these facts, unlikely as it appeared, the conclusion expressed was the only one left them.

In regard to operating in peritonitis, he agreed with Dr. Cameron: still there is no other hope for these patients, and while there is even the shadow of a chance by operating, he felt it is hard to refuse to undertake such a step.

Stated Meeting, June 9th, 1893.

WILLIAM GARDNER, M.D., IN THE CHAIR.

Cancer of the Uterus.—Dr. LAPTHORN SMITH exhibited a cancerous uterus which he had removed from a lady fifty-four years of age, mother of twelve children, the youngest of whom is now eleven years old. The menopause came on at the age of forty-nine, but a year later slight irregular hemorrhages made their appearance, which were regarded as a return of menstruation, and accepted as an evidence of the return of youth.*

About eight months ago she began to suffer considerable pain. She did not have any symptoms which she considered sufficiently urgent to seek advice until three months ago, when the pain became very severe; but she delayed doing so until three weeks ago, when, on making a digital examination, the cervix was found to be lacerated, and infiltrated with the characteristic nodules, which extended for about half an inch

* Which is a common impression among the laity in this province.

on to the adjacent vaginal surface, and the cervix bled readily during the examination.

As the uterus was fairly movable, he urged immediate total extirpation, and she quickly accepted the advice, so that only three days elapsed between the consultation and the operation.

He carefully curetted away all necrosed tissue, thoroughly disinfected with strong bi-chloride solution, made a circular incision in the vagina half an inch beyond the affected area, tied the uterine arteries on each side, opened Douglas cul de-sac, and sewed the peritoneum to the vagina; then separated the bladder and drew the fundus through the anterior opening, contrary to the method of Martin and Olshausen, who retrovert the uterus. This plan has the advantage that the cervix does not enter the peritoneal cavity, and thus the danger of infection is avoided, and also it affords an excellent opportunity for ligaturing the ovarian arteries. As there was slight oozing, he was obliged to apply a few pairs of pressure forceps, and a iodoform gauze drainage was introduced, these latter being left in for two days. The temperature never rose higher than 99½, and she left the hospital in three weeks from the operation.*

Hypertrophied Uterus removed by Vaginal Hysterectomy.—Dr. Smith exhibited the specimen which he had removed from a very stout woman 35 years of age, mother of three children, youngest three years old. Since the birth of her last child the uterus has been almost constantly outside of her body, dragging with it the vagina and rectum. During the last two years the pain has been very severe, and there has been a profuse foul-smelling discharge. She also suffered great distress in attempting to evacuate the bladder and bowels.

The operation was precisely the same as in the previous case, with the difference that this non-malignant one was remarkably easy to remove, the broad ligaments being under perfect control, and hardly a tablespoonful of blood being lost during the whole operation. He sewed the two broad ligaments together with catgut, and then closed the vagina, there being no need in this case to leave any forceps or gauze in the wound.

* This patient was heard from four months later, and was enjoying fairly good health.

The rapidity of her recovery was very remarkable, almost incredible. In four days she felt able and anxious to get up, and it was with the greatest difficulty that I could keep her in bed seven days. She was going about the house and tidying her room at the end of one week. What are the lessons to be learned from these two cases? From the case of cancer we see once again what has been already pointed out so often, that cancer of the cervix uteri almost invariably starts in a neglected laceration of the cervix uteri, and if this had been recognized and repaired, she would not probably have had to undergo this much more serious operation. And, secondly, that a woman may have cancer of the uterus in an advanced stage without there being any bad odor; in fact, the bad smell only comes when the case has already gone too far. And third, that a great deal of teaching must be done by the profession in order to dissipate the popular fallacy that profuse menstruation at the menopause is the proper thing, and that the return of the periods after they have ceased for several years is a sign of rejuvenescence, rather than one of the most certain signs of the presence of this terrible disease. Total extirpation only offers a reasonable promise of non-recurrence when the disease has been recognized early and the affected part removed.

In the case of procidentia, also, the beginning of the trouble was a very deep laceration of the cervix, which setting up sub-involution, and this latter causing the uterus to fall, and the resulting interference with the circulation leading to enlargement. In cases of this kind, also, this operation is just as safe as and more satisfactory than any other operation for the prevention of procidentia.

Dr. Wm. Gardner, commenting on the first case, thought it an especially favorable one for the operation of total extirpation. In fact, in all cases of malignant disease, the longer the interval which has elapsed since the menopause, the better is the prospect of eradication, and the less the likelihood of recurrence. The clinical history, too, in this case presents some points of interest, inasmuch as it affords an instance of the common error—often a fatal one—made by women in whom cancer appears for the first time after the menopause—that of mistaking the bloody discharge to be a return of their menses.

If the fact, that in 98 cases out of 100, a bloody discharge occurring several years after the menopause, means cancer, could become more generally known, many cases might be saved that are now lost through neglecting to consult a physician in the earlier stages.

With reference to the second case, Dr. Gardner said that the operation of total extirpation for procedentia uteri is the only one which affords a certain measure of cure; yet, at the same time, it should be seriously considered in a woman of this age. He has done it several times, but never in a woman so young; and under such circumstances he would hesitate at its performance, and encourage her to try some milder measure. In a woman past the menopause there can be no manner of doubt that this is the proper procedure.

A Case of Symphysiotomy.—Dr. SPRINGLE brought before the Society the woman upon whom he had performed this operation last autumn. (See MONT. MED. JOURNAL, vol. xxi., p. 487.) Commenting on the case, he said she now walks perfectly well. She retains all the movements of the limbs, and the symphosis itself is quite immovable. Unfortunately, there was some septic infection in the wound, followed by a sinus, which did not heal up for some time, until a small piece of bone came away. Since then she has been perfectly well. The child is very well, and the whole result of the operation, both as regards mother and child, must be considered very satisfactory. The mother suffers a little pain down the back of the left thigh, which, at the time of the operation, he was disposed to set down to some injury to the sacral plexus, as he believed that the anterior sacro-iliac ligaments had been ruptured. Of this, however, he is not now so sure, as he has since learned that she had at one time suffered from sciatica, and it looks as if there was a previous rheumatic history in the case.

Symphysiotomy.—Dr. J. C. CAMERON brought before the Society two women with their infants, the one having been delivered after symphysiotomy had been performed, the other with the aid of forceps. They closely resembled each other in height, weight and conformation of pelvis, and illustrated in a striking manner the relative indications for the two operations.

Case I.—M. K., aged 20; I–para. Labor began at 11.30 a.m. on May 2nd. Pains strong and almost continuous from the outset, causing much suffering. The fœtal heart was detected to the left and a little below the umbilicus, and was beating 128–140. The head lay on the left, and was not engaged. Chloral opium and chloroform given to relieve suffering. Membranes ruptured at 11.45 p.m.

Symphysiotomy was performed at 12.30 a.m., the operation being completed in 15 minutes, and the child delivered with forceps in 20 minutes. Investigations were made as to the distance the joint opened at the different stages of the operation.

Joint opened 2. cm. when divided.
" " 3.54 cm. when head passed through brim and cavity.
" " 5.56, when head passed through the outlet.
" " 2. cm. after the child was delivered.

The hæmorrhage was venous and slight, and was easily checked by a plug of iodoform gauze. Intra uterine douche was given and four perineal sutures were inserted. The symphysis was closed by two silver and two silkworm gut sutures, and a plaster binder was applied. The patient recovered well from the operation, and convalescence was rapid. She was catheterized daily. When all the stitches were removed on the eighth day, the wound had healed by primary union. The plaster was removed on the fifteenth day. She sat up in bed on the seventeenth day, and was out of bed and walked on the nineteenth.

Case II.—Aged 16, I–para. Labor began on May 4th. On the 5th and 6th pains increased in force and frequency. Membranes ruptured at 12.15 a.m on the 7th. At 10 a.m. was very restless. Chloroform was administered at 12.30. Forceps were applied and delivery accomplished without much difficulty. The recovery rapid and complete.

When born the child's head was very much elongated; far more so than usual. The cranial bones were soft and poorly ossified, and the head could be readily moulded. To this elastic, mouldable condition of the head, the comparative ease of the forceps delivery must be attributed.

The following table contains all the measurements in the in the two cases:—

MOTHERS.

	Normal.	Symphysiotomy Case.	Forceps Case.
	cm. in.	cm. in.	cm. in.
Anterior Superior Spines	26.00 or 10¼	23.00 or 8½	22.50 or 8⅞
Crests	29.00 " 11½	26.00 " 10¼	23.50 " 9¼
Trochanters	31.50 " 12⅜	29.50 " 11⅝	27.75 " 11
Coning. Ext	29.25 " 8	16.00 " 6⅜	17.50 " 7
" Ver	10-11 " 4 4½	6.50 " 2⅝	7.50 " 3
Symphysis depth		6.50 " 2⅝	6.50 " 2⅝
Umbil. circumference		84.00 " 33	81.50 " 32
Height		4 ft. 6½ in.	4 ft. 7¼ in.
Weight		78 lbs. 14½ oz.	76 lbs. 9 oz.

CHILDREN.

	cm.	cm. in.	cm. in.
Occipito-frontal diameter	12.00	12.75 or 5	10.25 or 4
Occipito-mental "	13.50	12.00 " 4¾	14.00 " 5½
Sub-occipital-breg. "	9.50	9.00 " 3½	10.5 " 4⅛
Bi-parietal "	9.25	9.25 " 3⅝	8.25 " 3¼
Circumferences:			
Occipito-frontal	34.00	35.00 " 13⅜	33.00 " 13
Sub-occipito-bregmatic	32.00	31.50 " 12⅜	30.50 " 12
Shoulders (b. achromiat)		36.25 " 14¼	29.50 " 11⅝
Hips (bis-iliac)		28.00 " 11	25.00 " 9¾
Length	48.00 to 54.00	56.00 " 22	47.00 " 18½
Weight	6½ to 8 lbs.	7 lbs. 8 oz.	5 lbs. 6 oz.
Placenta		1 lb. 11 oz.	1 lb. 4 oz.
Cord	51.00	51.00 " 20	44.50 " 17½

Here were two cases, in both of whom the measurements of the pelvis come within the limits in which symphysiotomy is indicated, but in the one the fœtal head was hard, much ossified, and not compressible, while in the other the head was very soft and very readily moulded to the shape of the passage.

Speaking of symphysiotomy, Dr. Cameron said that it is an operation which is safe for both mother and child in suitable cases, and under proper limitations, if performed under antiseptic precautions; otherwise the maternal mortality is large. It was abandoned long ago on account of this mortality, though performed quite as skilfully as now. It is not an operation to be rushed at, but must be done deliberately and with all the care necessary in an abdominal section.

Limitations within which it may be performed in con-

tracted pelves, the child being at full term, are a conjugate between 6. or 6.5 cm. to 8. or 8.8 cm.

Limitations for the different operations are:—

Above 8 cm. — 8.8 cm. forceps or version.
From 6.—6.5 cm. to 8. cm. symphysiotomy.
Below 6 cm. Cæsarian section absolutely indicated.

Craniotomy should be performed, in any case, when the child is dead.

The great advantage that symphysiotomy has over Cæsarian section is that forceps or version may be first attempted, and if they fail, then symphysiotomy may be done; whereas Cæsarian section is best done at the outset, when the parts are uninjured. He dwelt very strongly on the point that the *indication is always relative* and cannot be decided by pelvimetry alone. As illustrated by the cases shown, the disproportion between the passage and the child cannot be found out by measuring the passage only, but it must be found out how one is adapted to the other.

Dr. Lapthorn Smith was anxious to ascertain as to the probable frequency of the indications for such a procedure. From his own experience, he could only remember one case where it might have been indicated.

Dr. Gordon Campbell wished to know whether there is any way of approximately estimating the size of the child's head, so as to be able to decide whether in a case of contracted pelvis delivery might be effected by forceps or version before resorting to symphysiotomy.

Dr. Beller asked whether symphysiotomy is only indicated in cases where the head is unable to descend into the pelvis, or for contraction of the inlet?

Dr. J. C. Cameron replied that it is frequently done for contraction of the outlet.

Dr. J. A. Springle held that the operation is not a difficult one at all: any person ordinarily conversant with the anatomy of the parts should be able to do it. The precautions to be taken are to hold the urethra out of the way and to protect the pubic bones during the delivery of the child, that is, not to allow them to separate too widely.

The head in this case was a very hard one, and had it been

one centimetre more in diameter, it could not have come down, so little power had it to mould. As to hæmorrhage during the operation, there are no vessels that should be cut, but if bleeding should occur, it must be from some abnormal vessel; it might also result from the clitoris. In his case the incision had been a large one, and terminated at the lower angle of the symphysis. The place to make the incision is not always in the middle line. A writer in a French journal of obstetrics recently remarked that the symphysis is not always in the middle line, and that sometimes it is even ossified, when a saw instead of a knife would be required. The sub-pubic ligament, the saving of which has been stated of so much importance, does not matter much one way or another. It only consists of a few fibres, and their severance has very little influence on the prognosis of the case.

Dr. J. C. Cameron, in replying, said he drew attention to the sub-pubic ligament because so much stress has been laid by authorities on the fact that it should not be divided in toto, especially so on account of the danger from hæmorrhage, which might follow such an act. That there is a sub-pubic ligament, there can be no doubt; it was certainly present in his case. With regard to the choice of the middle line, of course a great deal depends on whether the incision is high or low. In the latter you cut down on the symphysis itself, and one can understand that it being to one side or the other of the middle line would be of importance. In the high incision, however, you cut down, not on the symphysis, but on the recti muscles, and should the former happen to be to one side or the other of the middle line, it only means that you require to pull your incision to the corresponding side.

With regard to the estimating the size of the child's head and its adaptation to the pelvis, the second case is very instructive; for a whole day or more the head simply lay above the pelvis, but she was kept quiet—kept as comfortable as possible,—and the head gradually moulded itself and engaged in the pelvis. He advised that if the woman is not suffering, not growing weaker, give nature time. You always have open before you, emptying the bladder and return, and then trying to fit the head into the pelvis by external manipulation.

A head that is at the brim and fairly well engaged, should be given time, even if but little advance is made. If the head remains persistently above the brim,—if it can be moved freely around without being able to be even forced into the brim, then we may begin to think of symphysiotomy.

He recalled just then five cases where the operation would have been effectual, and would have saved fœtal life; but it is possible that the number may be even more than that.

Nasal Septum Knives.—Dr. H. D. Hamilton exhibited for Dr. Major a set of knives devised by him for removing bony outgrowths from the nasal septum, which he claimed were much more expeditious than the saw. The knives were sickle-shaped blades, sharp on the concave surface, and could be attached to a handle by means of a spring. The knife is passed behind the spine and then drawn forward, thus removing the growth. The knives were of different shapes to meet the various conditions found.

Stated Meeting, June 23rd, 1893.

Dr. G. P. Girdwood, in the Chair.

Dr. Lapthorn Smith read the following paper, entitled "A Year's Experience in Abdominal Surgery." Several years ago I stated at a meeting of this Society that it was the duty of every one of us to report from time to time every major operation we performed, with the result, no matter whether the patient survived or not, and in the latter case to explain as far as possible the cause of death. I have, therefore, reported from time to time to this Society every one of my cases of abdominal section. My last paper was read on the 27th May, '92, since then I have performed coeliotomy 16 times, with only one death, which took place three weeks after an exploratory incision in an inoperable case of tubercular peritonitis.

Case I.—Conservative coeliotomy; ovaries and tubes bound down beneath a retroverted uterus, causing dysmenorrhœa and menorrhagia; adhesions broken up and uterus sewed to abdominal wall; operation for fistula in ano performed at the same sitting. Recovery.

Mrs. H., aged 43, began to menstruate at 14, her periods having always been painful and profuse. She was married at

25 and had two children, both labors being very severe. Ever since her first confinement she has complained of a pain in her back and bearing down; and during the last year menstruation has been coming on every three weeks and lasting eight days each time.

On the 2nd January I opened the abdomen, inserted two fingers, and gradually tore through several layers of organized lymph until the uterus and ovaries and tubes became freely movable. The ovaries, with the exception of the inflammatory exudation surrounding were otherwise healthy, and were not removed. The uterus was then sewed to the abdominal wall in the usual way.

The patient was then placed in the lithotomy position and a lacerated cervix repaired with catgut, after which the very tortuous fistulous tract in the perineum was at first slit up throughout the whole of its extent until the bowel was reached. It was then dissected out by the aid of a sharp hook and scissors. The other side of the perineum, which had no fistula, but which was torn, was then split up as in Tait's perineum operation, and the two raw surfaces accurately brought together with silk-worm gut sutures. Primary union was obtained both at the abdominal and perineal incisions, the temperature never reaching 100 F. The sutures were removed from the perineum in 10 days, and from the abdomen in 30 days. This patient left my private hospital six weeks after the operation, and has been heard from lately, stating that she is enjoying the best of health.

Case II, of retroverted uterus, with prolapsed and bound-down ovaries and tubes. Removal of appendages. Recovery.

Mrs. P., aged 27, began to menstruate at 14; married at 22; had one mis-carriage seven months later, when four or five months pregnant. Is so emaciated that she was thought to be in consumption, but, on examination, her lungs were found to be healthy. She suffers from leucorrhœa and constipation, and defecation is painful, as is also coitus and locomotion, especially if she makes a mis-step. Her digestion is bad, and she has almost constant pain in her back and at the pit of the stomach.

On examination the ovaries were found enlarged, exquisitely tender, and firmly bound down in Douglas' cul-de-sac, with

the uterus lying upon them. She entered my private hospital on the 30th January. After two weeks' preparatory treatment the abdomen was opened, the adhesions broken up, the ovaries and tubes removed, and the uterus fixed to the abdomen. A glass drainage tube was inserted, from which about four ounces of bloody lymph was withdrawn. The patient made a very slow recovery, only going home two months after the operation, but when last heard from, a few days ago, had completely regained her appetite and digestion, and had increased fourteen pounds in weight since the operation. She has no longer any pain, either on defecation, coitus or locomotion, and she is managing a large hotel.

Case III.—Retroverted uterus and inflamed ovaries and tubes, the latter leaking into the peritoneum, setting up pelvic peritonitis. Removal of appendages; ventrofixation. Recovery.

Mrs. S., age 26, consulted me on the 7th January, 1893. She began to menstruate at 13; was married at 22; never pregnant. Ever since her marriage has complained of pain in her left side low down, and also across her bladder and bowels. The latter have always been constipated, and when they move she suffers severe pain in the ovaries. Coitus has always been painful. Bimanual examination shows the ovaries to be enlarged to double their usual size, both of them low down in Douglas' cul-de-sac and fixed there together with the tubes. The uterus was lying on them and firmly adherent to the mass.

Celotomy was performed on the 24th January, after the usual preparatory treatment. Great difficulty was experienced in detaching the appendages, one of the ovaries tearing, and having to be removed piecemeal. After scarification of its anterior surface, the uterus was fastened to the abdominal wall, as already described in the previous case. A long thin glass drainage tube was left in, and incision closed with silkworm gut. The tube was removed in two days, there being a good deal of oozing. The patient made a good recovery, being up in three weeks, and going home in six weeks. When last heard from there was no pain on micturition or defecation. I wished to save these ovaries also, but they were so disorganized by the efforts necessary for detaching

them, that I was compelled to remove them. The tubes were inflamed, the fimbriæ being glued all around to the surface of the ovaries.

Case IV.—Miss T., 26 years of age, was referred to me on the 28th November, 1890. She presented the following history:—Menstruation began at 15; never regular, lasting five days, and always painful. Her bowels were generally four or five days without a movement. She had a dull, heavy pain in the region of the womb and ovaries, which was so severe on the left side as to prevent her from walking. On examination I found the uterus retroverted and the left ovary prolapsed beneath it, and exquisitely sensitive. Under several weeks' treatment, both local and general, she was somewhat relieved and returned home.

She was never able to work very much at her occupation at the rubber factory, and at times the pain in her back and side was so severe as to compel her to be in bed. After two or three years more or less persistent treatment, carried out by her family physician, the latter became convinced that nothing short of operative treatment would cure her. He, therefore, sent her to my private hospital, where I removed both ovaries and tubes. She made a rapid recovery, went home in four weeks, resumed work in the rubber factory soon afterwards, and has not lost a day since, as I am informed by a letter received a few days ago from her physician.

Case V.—Large cystic kidney. Removal. Recovery.

Mrs. S., aged 32 years, was referred to me by her physician, Dr. Dostaler, for a large cystic tumour completely filling the abdomen. It was tensely fluctuating, and on vaginal examination was found to be pressing on the uterus, but apparently not connected with it. After thoroughly clearing out the intestines with salines, it became evident that the tumour was a dilated kidney full of liquid. Owing to its very large size, I decided to operate by median abdominal incision. This was done, an opening about three inches long being made in the linea alba, and the peritoneal cavity being opened. The tumour was then come upon and was found to be covered with the small intestines and mesentery. A spot was found where there were no blood vessels; a slight nick made in the mesentery, which was enlarged by tearing sufficiently to allow the

hand to be introduced. The latter was then passed around in every direction until the peritoneum was detached completely from the tumour, which was then only attached by the vessels and nerves and the cellular tissue entering the hilum. The tense tumour was then punctured with the trocar, and emptied of about a gallon of semi-purulent fluid. As the tumour collapsed it was gradually drawn out of the opening in the posterior layer of the peritoneal sac, and then through the anterior layer of the peritoneum, lining the abdominal wall. It came out in exactly the same manner as does a unilocular ovarian cyst. It was then found to have a base of about four inches, which was ligatured *en masse*. A separate ligature was put on the renal artery, which could be seen distinctly, rather larger than a goose quill.

The tumour was then removed and the pedicle dropped back through the two openings in the peritoneal sac, until it rested outside the peritoneal cavity close to the vertebral column. For fear of oozing from the detachment of so large a surface, a glass drainage tube was introduced down to the stump, the abdomen was flushed out with boiled water, and the incision closed with silk-worm gut interrupted sutures.

There was almost no oozing; therefore, the tube was removed the next day. There had been no albumen in the urine before the operation, and there was none afterwards. There was no rise of temperature, the only unpleasant symptom being a sharp attack of diarrhœa on the third or fourth day, and the rapidity of the pulse, which kept at 140° for several weeks, but which eventually came down to 90° before she left my private hospital, at the end of the fourth week. This patient has been seen occasionally since and is enjoying good health, having now red cheeks, and having gained considerably in flesh.

Case VI.—Ovarian cyst. Removal. Recovery.

Mrs. D., 36 years of age, began to menstruate at the age of 14, the flow always being painful and scanty. She was married at the age of 17 and had two miscarriages, one at four and the other at five months. She has been constipated all her life, and has had to strain a good deal to obtain a movement of the bowels. She has for the last ten years suffered

from pain in the sides and back, accompanied by a dragging sensation.

On examination a nodular fluctuating tumour was easily made out, occupying Douglas's cul-de-sac, which was kept under observation for some little time; and as the tumour was steadily growing, she decided to have it removed, which I did at my private hospital on the 11th March. The operation presented no difficulties, there being only very slight adhesions, and she went home at the end of three weeks. The abdominal incision in this case was closed by through and through silk-worm gut sutures. She has had excellent healtq ever since, being a good illustration of the easiness and safety of ovariotomy, if performed early.

Case VII.—Cancer of both ovaries. Removal.

Mrs. C., aged 52, sent for me on the 1st Sept,, '92, when I found her propped up in a chair and cyanosed. Her legs were very much distended with water, as was also her abdomen; her pulse and respirations were both rapid, and she appeared to be gasping for breath. Bi-manual examination only showed that the abdomen was firmly distended with water. Subsequent examination of the urine showed it to be full of uric acid, and also to contain a considerable amount of albumen.

Under digitalis and nitrate of potash there was considerable increase in the quantity of urine, which had been very scanty, and a corresponding improvement in the pulse and respiration, and diminution of the albumen. But after severa weeks of this treatment the patient was still in such a miserable condition that I decided to take her into my private hospital and make an exploratory incision; remembering, however, that the sudden removal of a large quantity of water from the abdomen is apt to be followed by hæmorrhage into the large veins, owing to the taking away of their support, I substituted tapping with a fine trocar, and removed a pail and a half of water, about 15 quarts. When two or three quarts had escaped I perceived two large smooth hard round bodies freely movable in the abdomen, and when the total amount of fluid had been removed it was quite easy to make out through the now relaxed walls that these were ovarian tumours.

The urine having improved very much after the removal of

the pressure from the kidneys, becoming quite free from albumen, abdominal section was performed on the 5th Oct., when two tumours, perfectly smooth and solid, measuring each about 18 inches in circumference were removed without difficulty, there being no adhesions whatever. These, on being submitted to the microscope, proved to be cancerous ovaries. In trying to draw down the omentum with which to cover the intestines, I found that the former had shrivelled up like a piece of burnt leather and could not be drawn down. At the same time I felt the under surface of the liver very nodular.

The abdomen was closed with through and through silkworm gut sutures, and the patient made an uninterrupted recovery, her pulse and respiration becoming almost normal, as did also her urine. She left my hospital at the end of 25 days, and was seen at the end of another month looking fairly well. But I was informed by her family physician at the end of three months that she was failing rapidly from extension or rather progress of the disease in the liver.

Case VIII.—Retroverted uterus and prolapsed and adherent tubes and ovaries. Removal of appendages. Ventrofixation of uterus. Recovery.

Mrs. C., aged 26, married 6 years, never had any children, was probably infected with gonorrhœa on her wedding tour, ever since which she has been a sufferer, defecation, locomotion and coitus all being exceedingly painful. On examination I found both ovaries and tubes bound together in one general mass in Douglas's cul de-sac, and the fundus of the uterus lying on top of them, so that every step would necessarily cause great pain.

I treated her for several months by massage, painting the vaginal roof with Churchill's iodine, columning the vagina with boro-glyceride tampons, and giving her hot douches, but was never able to detach the bound-down organs from their false position. As her life was miserable, she begged for relief, which only an operation could afford her, and, accordingly, on the 14th of October, '92, I performed coeliotomy, and, with the greatest difficulty, almost exhausting my strength, I succeeded in breaking through layer after layer of false membrane, consisting of organized lymph. The ova-

ries and tubes were torn in several places during the effort, but they were finally lifted from the abdominal cavity, ligated and removed. The uterus was sewed to the abdominal wall, as in the other cases.

A drainage tube was left in for over two days, on account of the large quantity of fluid serum coming from the torn adhesions. When these appendages were placed in a basin of water they were found to be covered with floating fringes of the torn adhesions. The stitches were left in 20 days, being removed the day before the patient left the hospital.

She was seen nine months later, when she was working in the cotton factory, entirely free from pain.

Case IX.—Retroversion of the uterus. Ovaries and tubes bound down under the fundus and surrounded with exudation. Removal of appendages. Ventrofixation. Recovery.

Mrs. S., aged 24, married 4 years, never pregnant, has suffered agony, ever since she was married, from pain on coitus, which rendered life unendurable. On examination, Douglas's cul-de-sac was found to be occupied by a tender mass, which was believed to be made up of the tubes and ovaries. The uterus was retroverted and could not be lifted up. The same operation was performed as in the previous case, the patient leaving my private hospital inside of a month, and when seen six months later had increased about twenty pounds in weight, and looking the picture health, and she was entirely free from pain on coitus. Examination proved that the uterus was still firmly adherent to the abdominal wall, where it had been sewn.

Case X.—Retroversion. Alexander's operation. Failure to find the ligaments. Ventrofixation. Recovery.

Mrs. W. was so distended with gas that she believed herself pregnant. This was found to be due to retroversion of the uterus. As the latter organ was easily replaced, I decided to do Alexander's operation, but for the second time in my experience of some 20 operations, I was unable to find the round ligament. I, therefore, did hysterorraphy in the same manner as described in the previous case, the ovaries and tubes being left intact. The result was very satisfactory; the distention of the abdomen soon disappeared, and the patient is

now performing her household duties entirely free from pain and the distension from which she formerly suffered.

Case XI.—Case of ovarian abscess developing in the left side one month after removal of a pyosalpinx on right side. Recovery.

Mrs. E., 29 years of age, from whom I had removed, on the 7th May, 1892, a suppurating tube and ovary from the right side, which had burst into the vagina. The first operation, which has already been reported, was a most difficult one, the broad ligament having to be tied off in sections, owing to the impossibility of dissecting the abscess sac from it. After a precarious recovery from the first operation the patient went home, when she was suddenly taken with a very acute pain in the left side. On examination the left ovary was found to be the size of an orange, although at the first operation it had been carefully examined and found to be perfectly normal. It must, therefore, have become infected during the progress of the first operation, when the stinking pus tube burst and inundated the contents of the abdomen, although the soiled organs had been carefully washed with boiled water. The patient was again taken to the Women's Hospital and a second cœliotomy performed on the 1st July. At the second operation the intestines, where they had been separated from the adherent pus tube were glued together in one mass so firmly, that nothing would have separated them. The patient, however, made an excellent recovery, and has gained considerably in weight. She has brought me already several long pieces of plaited silk ligature which had been used for tying off the broad ligament at the first operation, and the last time I saw her there was still a very slight fistula, probably leading down to another silk ligature. This case made me decide in future to employ catgut in such cases. In view of the fact that about two feet of her small intestines are matted together, she takes the precaution of swallowing no food that could not, when moistened, be squeezed through a collander or rinsing machine. So far she has had no trouble with her bowels.

Case XII.—Severe dysmenorrhœa: salpingitis and ovaritis of long standing. Removal of appendages. Recovery.

Mrs. W., 26 years of age, had been complaining for several years of severe pain in the ovarian region, and on examina-

tion the tubes and ovaries were found to be exceedingly sensitive. She also had suffered all her life from dysmenorrhœa. As she was very anxious for an operation, I removed the appendages on 21st January, '93, at the Women's Hospital. She made a good recovery.

Case XIII.—Umbilical hernia. Lacerated cervix and perineum. Radical cure. Trachelorrhaphy and perineorrhaphy. Recovery.

Mrs. T., aged 51, sent to me by Dr. Drummond, had been an invalid for several years owing to a series of reflex disturbances, which might have been due equally well to an irreducible umbilical hernia or to a lacerated cervix and perineum. She was unable to walk erect owing to the dragging from the umbilicus to the back, and was very anxious for the operation for the radical cure, contrary to the advice of several older members of the staff, who, taking into consideration her extreme obesity, her weight being 294 pounds, combined with the weakness of her pulse, that the risk of the operations was hardly justifiable. However, I compromised by only doing one operation at the first seance, namely, the umbilical hernia. This was done at the Women's Hospital on the 28th January, '93, a piece of the omentum the size of the hand, being tied in segments and cut off, the remainder of it, with the intestines, being returned into the abdomen. The hernial opening had to be enlarged considerably before this could be done; the sac was then carefully dissected out, the peritoneum brought together with fine catgut, the aponeurosis of the muscles being united with buried silkworm gut interrupted stitches, aud the skin with sutures of the same material. As this patient had no desire for food, she was kept on water absolutely for nearly a week, and voluntarily abstained from almost everything else for nearly another week, when her condition being very fair, the cervix and perineum were repaired. She made an excellent recovery and returned to England a few months later, free from pain and reflex disturbances, and walking erect.

Case XIV.—Ovarian abscess. Removal. Recovery.

Miss G., 20 years of age, mother of one child nine months old, ever since the birth of which she has complained of a

severe pain in the left side. Examination showed a cicatrized but deep left laceration of the cervix, for the repair of which she was being prepared at the Women's Hospital, when the house-surgeon accidentally discovered a tumour about the size of an orange on the right side. This was very tender to the touch, and I therefore decided to remove it before repairing the cervix. This was done on the 18th February, 1893, when it was found to be an ovarian abscess containing about two ounces of thick yellow pus. The abscess sac was slightly torn during the process of enucleation from the dense adhesions surrounding it, but fortunately the rent was covered with a sponge, so that none of the matter touched the intestines or wound.

This patient, also, made a good recovery, but seven months later, when seen, was found to be suffering from pain in the left side, probably due to the lacerated cervix, which will have to be repaired before long.

Case XV.—Mrs. S., 36 years of age, informed me that she had been in the New York Women's Hospital for a very painful swelling in the right ovarian region, which, on examination, was diagnosed as a pus tube and ovary, but so completely surrounded by dense adhesions, that the surgeons on duty declined to operate. She suffered from severe pain, with occasional attacks of pelvic peritonitis and abdominal distention, until she was placed under my care by Doctor Reddy. The risk of the operation being fully explained to her, and she being anxious to have it done, coeliotomy was performed at the Women's Hospital, Montreal. I, with great difficuty, dug out from the right front half of the pelvis a large pus tube and ovary, with a vermiform appendix attached to it. As several of my colleagues present at the operation thought that this long cylindrical tube leading up to and disappearing under the kidney might be the ureter, and although I proved that the bladder was intact, by injecting water into it, which did not come through to the abdomen, still, in deference to their opinion, I sewed the end of the tube into the abdominal incision.

This patient also made a good recovery, although taking a little longer than usual, leaving the hospital in about six or seven weeks.

She has lately been seen in robust health, and states that she is free from pain of any kind.

The result was much better than I anticipated. Owing to my having noticed several lumps in the back of the abdomen and pelvis about the size of pigeons' eggs, which looked very like malignant deposits in the glands, I feared cancer, but they were evidently merely due to absorption of inflammatory material, and there is now no trace of them to be found. I intend to present this patient to the Society to show that she is none the worse for having her appendix anchored to the abdominal incision, where, if it ever gives trouble, it can easily be found.

Case XVI.—Tubercular salpingitis. Cœliotomy. Death.—Mrs. S., 30 years of age, consulted me for a pain in the left ovary. On examination I found a small star-shaped laceration of the cervix uteri, and above that a thickened tender tube and ovary. On taking her temperature I found it to be 103°, so I ordered her to go home at once and remain in bed. After some further observation, a diagnosis of tubercular salpingitis was made, either with or without extension to the abdomen. The patient was extremely emaciated, and several hard areas could be felt, not only around the diseased appendages, but further up into the abdomen. She also had a diarrhœa, which I was unable to stop. As she steadily became more and more emaciated, I told her that the only thing which held out the slightest hope for that disease was the opening and draining of the abdomen, to which she readily consented. I performed this operation and found the intestines so adherent to each other and to the abdominal wall, that I had to open the latter layer by layer on the director. I was hardly able to say which was omentum and which was intestine, as the whole contents of the abdomen were glued together in one mass and covered with myriads of tubercles.

I carefully made my way down to the left tube, and succeeded in partly digging it out in a cheesy condition. A drainage tube was inserted and the patient sewn up.

Strange to say, her temperature fell after this and remained down for about a week, when it gradually rose again to its previous height.

She seemed somewhat better for the operation and was doing well, when about three weeks later she was suddenly taken with severe hæmorrhage from the bowels, probably due to ulceration, and died a few days afterwards from exhaustion.

These constitute the whole of my abdominal sections since making my last report a year ago. As I have already said, I claim one death, not because she died from the operation, but because her death occurred within a month of its performance. I desire to call the attention of those who think that gynecologists are too ready to perform abdominal sections to the fact that I have only found it necessary to open the abdomen in sixteen out of a total of several hundred women who consulted me at the Montreal Dispensary, at the Women's Hospital, at my office, and at their homes; and even these, with one or two exceptions, had been under treatment for from two months to two years before I made up my mind to resort to operative treatment. Only after a patient and persistent trial of every other method of treatment without avail have I resorted to abdominal section. With the exception of the case of cancer and the case of tubercular peritonitis, the result has been entirely satisfactory.

*Six Months' Medical Evidence in the Coroner's Court.**—Dr. Wyatt Johnston read the following report for himself and Dr. Villeneuve :

At the commencement of the present year, when, on account of his long experience in criminal matters, our present energetic and capable coroner was appointed, it was intended that his duties were to be purely judicial, and that medical questions in connection with coroners' inquests were to be investigated by a physician specially appointed for that purpose, whose duties should correspond with those of the " coroners' physicians " or " medico-legal experts " of other countries.

These duties having been entrusted to one of the writers since the beginning of the year, or, in case of absence, to the other, we think it well now to review the medical evidence given be-

* As the present paper is chiefly of a general nature it seemed preferable to make our communication a joint one, although most of the evidence has hitherto been given by one of us (Dr. Johnston).

fore the Coroner's Court during the past six months under the new system.

We wish first to express our thanks to the members of this Society, and to the medical profession in general, for the cordial support they have given, from first to last, in effecting some much needed changes in connection with Coroners' Court inquests. We also wish to thank the members of the Provincial Government for the great interest they have taken in the matter and the uniform courtesy with which all suggestions concerning it have been received.

A beginning has already been made in the direction of placing matters concerning medical testimony at inquests on a different footing, but owing to some technical difficulties in arranging the duties of this new medico-legal office, we have only been consulted in a relatively small proportion of the total inquests. For this reason a communication limited to our own personal observations would not be fairly representative of the evidence in the Coroner's Court, so we have, in addition, supplemented our own observations by studying the testimony given by medical witnesses in cases where we were not consulted. All internal post mortem examinations ordered by the coroner or jury were made by the expert, but as autopsies are only called for in a small number of cases, many of the inspections of the body, which constitute the majority of the examinations, were made by other medical men. A radical change has not yet been found feasible under the present law, though I may state that the present coroner is strongly of opinion that autopsies should be performed in every case where it is necessary to hold an inquest. Our information as to medical testimony given at inquests where we were not present has been obtained from the records of inquests deposited at the Crown and Peace Office.* These documents are at all times accessible to any one who may wish to see them, and therefore the information obtained from them is not of a privileged or secret nature.

During the six months ending June 30th, 1893, 202 in-

* We have to thank Mr. C. Doucet, Clerk of the Crown and Peace Office, for kindly aiding us in consulting the records.

quests have been held in the Montreal district, out of which we have been called to give testimony in 70. During the same period 26 autopsies have been ordered, all of which have been entrusted to us.* In the remaining inquests, 130 in number, the examinations were made by 68 different medical men. Except in specially important cases the expert does not examine the bodies of those who have been seen during life by other medical men.

It seemed expedient in the present paper to treat the medical evidence in a general statistical way only, reserving for future and more scientific papers the details of the cases.

Comparing the work of the Coroner's Court with that of two years ago, in 1890 and 1891, we find that then about 240 inquests were annually held in the district of Montreal, and in these 12 autopsies were made, so that at present the number of inquests is nearly twice as great, and that of autopsies is about four times as great as under the old system.

Taking the population of the district of Montreal as 300,000 (which is well below the mark), we find that 0.8 inquests were then held per year for every 1,000 inhabitants. In Philadelphia 2 per 1,000 are held annually, and in Liverpool 1.7 public inquests per 1,000, and as many more coroner's private inquiries, so that the number of inquests in Montreal is relatively small as compared with other large cities, the frequency for the past half year being at the rate of 1.32 per annum.

Here, as elsewhere, of all the cases brought to the notice of the coroner, only a few finally prove to be medico-legal. In Liverpool, of 900 inquests held in 1892, only 4 verdicts of murder and 8 of manslaughter were found, or in other words, less than 1.3 per cent. of the suspicious deaths were found to be due to criminal violence or negligence.† In South-west London, out of 20,000 inquests during 20 years, there were 8 verdicts of murder, 14 of manslaughter, and 59 of infanticide, or 0.4 per cent. of criminality.‡

* We take this opportunity of thanking Coroner McMahon for the uniform courtesy and consideration which he has shown us in our capacity of experts, which has made our work under him specially agreeable.

† F. W. Lowndes' evidence before committee on death certification, 1893.—*British Med. Journal*, May 6, 1893, p. 962. ‡ Braxton Hicks.—*Ibid.*

That so much material must be sifted in order to detect criminal cases affords an explanation of the fact that we have no startling or sensational tragedies to report to you to-night. Possibly if more autopsies had been held more crime would have been detected, and certainly in two cases the circumstances seemed sufficiently suspicious to warrant us, as medical men, in suspecting foul play, although as the juries did not think it necessary to order autopsies in either of them no positive statement can be made on this point.

In the Province of Quebec, as we know, except in exceptional cases, it is the practice only to hold autopsies with the consent of a majority of the jury. Why a juryman should be supposed to know better than the coroner or the medical witness where an autopsy is needed is a matter which we cannot pretend to explain, but, such being the law, there is at present apparently no remedy but patience.

In Montreal to hold 240 inquests annually meant that 2,880 jurymen must be empanelled each year to consider the evidence. Were the coroner permitted to order an autopsy when necessary to establish the cause of death, not only would the entire medical evidence be ready for the jury at its first session, but as in three-fourths of the suspicious deaths natural causes of death could be demonstrated, three-fourths of the inquests would be prevented, in other words, 2,160 of the citizens of Montreal would annually escape the annoyance of having to sit on juries in order to bring in verdicts of death from natural causes, and the attention of the coroner and his juries would be concentrated on the few really criminal cases. Unfortunately we learn from the very highest authority that the holding of autopsies in order to prevent inquests is illegal and contrary to the spirit of the British criminal law. This is a matter to be regretted, as it causes much loss of time and unnecessary expense.

The British Coroners' Act of 1887, however, empowers the coroner to order an autopsy to be performed before the jury is summoned; were this the case here much of the jurors' valuable time would be saved in the minor cases.

Education of Jurymen.—Out of 1,200 jurymen empanelled for a series of 100 consecutive inquests 879 signed their names and 321 made their marks. The percentage that signed is 73.2, and I am informed by Mr. Biron, Coroner's Clerk, that a number more were able to write but refrained from doing so; some from modesty, others for fear of soiling the paper. We may assume that about 80 per cent. of the jurymen were able to write, but from the appearance of the signatures I should judge that less than 50 per cent. were persons who had written sufficiently often to give any character to the handwriting. Some of the most sensible verdicts were rendered by jurors, none of whom could write, and some of the most absurd ones bore the autographs of all twelve jurors.

Inquests in past Six Months.—In the 202 inquests held from January to June, 1893, the following verdicts were returned. We have placed in separate columns the cases in which we were consulted as experts, and also those in which autopsies were made.

In 88 cases out of 202 (that is to say, 43 per cent.), the investigations were what is known as *ex-parte*, or held by the coroner without summoning a jury. In these cases the suspicions of crime were either very slight or shown to be groundless upon preliminary inquiry.

The regular fees were not paid to medical witnesses in these cases, except in three instances where the medical expert was consulted; in the remainder the testimony was informal and not taken under oath. The practice of holding these *ex-parte* inquests appears to have been discontinued, none being recorded in the month of June. In other words, public records are not kept of the cases in which, upon inquiry, the coroner does not find cause for summoning a jury.

Table showing relative frequency of inquests before coroners, of coroner's inquiries without juries, and of autopsies, for the half-year from January to June, 1893. The percentage of inquests in which autopsies were ordered is also given for each

month. This has increased from 7.3 per cent. in the first quarter to 14.6 per cent in the second.

Months, 1893.	Inquests before Jury.	Inquiries without Jury,	Total number of deaths investigated by coroner.	Autopsies.
January	9	14	23	3 (13 per cent.)
February	11	24	35	2 (6 per cent.)
March	14	21	35	1 (3 per cent.)
April	13	15	28	6 (21 per cent.)
May*	22*	14	36	4 (11 per cent.)
June	44	0†	44	10 (22 per cent.)
Total	113 (57 per cent.)	88 (43 per cent.)	201	26 (12.8 per ct.)

Table showing the verdicts of the Coroner's Court for the District of Montreal from January to June, 1893, including the conclusions arrived at in *ex-parte* inquests held without jury in minor cases; these are also placed in a separate column:—

Verdicts.	Ex-parte. No Jury.	Expert called.	Expert not called.	Total.	Autopsies.
I.—Homicidal Deaths.					
Manslaughter	..	1	1	2	1
Jury undecided—Manslaughter or Justifiable Homicide	..	1	..	1	1
Infanticide	..	1	..	1	1
Total	0	3	1	4	3
II.—Suicidal Deaths.					
By Paris Green	..	2	3	5	2
Rough on Rats	..	1	..	1	1
Sulphate of Copper	..	1	..	1	1
Cutting Throat	..	..	2	2	..
Hanging	..	1	..	1	..
Drowning	..	1	..	1	1
Firearm	..	1	..	1	0
Total	0	7	5	12	5

*One inquest in a case of arson is omitted, as having no bearing upon medical evidence.

† Since the 1st of June no public record is made of the facts elicited by coroner's inquiry in the cases where it is not necessary to summon a jury.

Verdicts.	Ex-parte. No Jury.	Expert called.	Expert not called.	Total.	Autopsies.
III.—Accidental Deaths.					
Fall into Hold of Ship	..	1	.	1	..
Railway Accident	.	7	3	10	1
Street Car "	...	1	3	4	..
Elevator "	..	3	..	3	.
Carriage "	..	1	2	3	1
Runaway Horse Accident	..	2	..	2	..
Tobogganing "	..	1	..	1	..
Machinery "	..	..	1	1	..
Firemen on Duty	..	1	2	3	.
Others Suffocated by Smoke	.	.	1	1	..
Fall of Building	..	2	..	2	..
Fall of Derrick	..	2	..	2	..
Fall down Stairs	1	..	2	2	..
Explosion of Gas	..	1	..	1	..
Bursting Accident	..	..	1	1	..
Explosion of Water Pipe	1	.	1	1	..
Burning	4	4	5	9	...
Scalding	..	..	1	1	..
Inhalation of Gas	.	1	3	4	..
Choked by Food	2	1	2	3	..
Hæmorrhage Umbilical Cord	..	1	..	1	1
Over-Laying (Suffocation of Infant in Bed)	1	..	1	1	..
Accidental Drowning	1	7	4	11	1
Administration of Chloroform	..	1	..	1	1
Sudden Death from Lead Colic	..	..	1	1	..
Poisoning by Morphia	.	.	1	1	.
" Soothing Syrup	1	...	1	1	..
" Chlorodyne (Anticholerique)	1	..	1	1	..
Insolation (Sunstroke)	..	..	1	1	..
Exposure	..	1	.	1	..
Paralysis from Exposure & Intemperance	..	1	..	1	..
Total	12	39	37	76	5
IV.—Deaths from Natural Causes.					
1. *Nervous System:*—					
Apoplexy	3	..	3	3	..
Cerebral Hæmorrhage	..	2	.	2	2
Abscess of Brain	..	..	..	1	1
Congestion of Brain	1	..	1	1	..
Meningitis	.	.	1	1	..
Paralysis	1	..	2	2	.
2. *Circulatory System:*—					
Heart Disease	16	1	18	19	..
Fatty Degeneration of Heart	1	..	1	1	..
Aneurism	1	.	1	1	..
Syncope of Heart	1	..	1	1	..
Heart Disease aggravated by Intemper'nce	.	..	1	1	.
Syncope of Heart caused by Intemperance	.	..	1	1	..
Cardiac Asthma	1	..	1	1	..
3. *Respiratory System:*—					
Asphyxia	1	..	1	1	..
Pneumonia	3	4	3	7	3
Congestion of Lungs	1	.	2	2	.
Pneumonia or Heart Disease	1	..	1	1	..
Inflammation of Lungs	1	..	1	1	..
Pulmonary Embolism	.	..	.	1	1
Hæmoptysis, Phthisis	1	..	.	1	1
Consumption, Phthisis	8	..	9	9	.
Capillary Bronchitis	..	..	1	1	..
Pulmonary Apoplexy caused by Emotion	.	.	1	1	..

Verdicts.	Ex-parte. No Jury.	Expert called.	Expert not called	Total.	Autopsies.
4. *Digestive System:—*					
Inflammation of Bowels	1	.	1	1	.
Cholera Morbus	1	..	1	1	..
Diarrhœa	..	..	1	1	..
Peritonitis	2	..	2	2	..
Cancer of Liver	1	..	1	1	..
Hepatic Colic	1	..	1	1	..
Jaundice	1	..	1	1	..
5. *Urinary System:—*					
Urethral Fever	2	..	2	2	..
6. *Generative System:—*					
Puerperal Fever	1	..	1	1	..
Metroperitonitis	1	..	1	1	..
7. *Other Diseases:—*					
Purpura	1	..	1	1	..
Dropsy	1	..	1	1	..
Infantile Debility	..	1	1	2	..
Senile "	2	..	3	3	..
Stillborn	..	3	..	3	3
Sudden Death from Lead Colic	..	..	1	1	..
Tumour	1	.	1	1	.
Incurable Disease	1	..	1	1	..
Intemperance	..	1	..	1	..
Total	59	15	70	85	11
V.—Open Verdicts.					
Sudden Death—No cause assigned	3	..	3	3	..
Unknown Causes	8	.	8	8	..
Natural Causes	5	..	6	6	..
Unknown Natural Causes	..	2	1	3	..
Canadian Cholera or Poisoning	..	1	..	1	1
Found Drowned	..	3	..	3	1
Total	16	6	18	24	2
Summary.					
Homicides	0	3	1	4	3
Suicides	0	7	5	12	5
Accidents	12	39	37	76	5
Natural Death	59	15	70	85	11
Open Verdicts	16	6	18	24	2
Total	88	70	131	201	26

Inquests without Medical Evidence.—In 22 of the cases, or nearly 11 per cent., no medical testimony at all is recorded, the verdicts being as follows:—

Accidents.		Natural Causes.		Open Verdicts.	
Burned	1	Consumption	2	Sudden Death	2
Railway Accident	1	Pneumonia	2	Natural Causes	1
Accidentally Drowned	2	Heart Disease	2	Unknown Causes	5
Inhalation of Gas	1	Pneumonia or Heart Disease	1	Unknown Natural Causes	1
		Debility	1		
	5		8		9
				Total	22

The advisability of saving physician's fees in these cases, if any grounds existed for making an enquiry at all, appears questionable ; certainly, in those cases where death was not due to accidents attested to by reliable eye-witnesses, it hardly seems prudent to act entirely without medical testimony. The fact that in 53 per cent. of these cases open verdicts were the result, speaks for itself.

Upon looking at the *ex-parte* inquiries it will be seen that out of a total of 88, 59 (*i.e.*, 67 per cent.) were in connection with cases where death appeared to be due to natural causes. In other words, two-thirds of these cases were essentially of a medical nature. If we exclude the 12 accidents where, of course, the nature of the violence was obvious and only the question of responsibility remained to be decided, we find that out of the 66 remaining cases 89 per cent. were assumed to be due to particular diseases. As the remaining open verdicts in 16 cases were probably also of a medical nature, we find only 12 cases out of the whole 88, or less that one-seventh, were what might be called non-medical. No better proof of the necessity of expert medical work in minor cases in the Coroner's Court could be afforded than is shown by this analysis of the material.

Taking the entire number of cases dealt with, 202, and deducting 24 open verdicts, 1 case of arson and 76 accidents where the nature of the violence which had caused death was obvious in almost every case, we have 100 cases left. In these, 85 verdicts of death from natural causes were returned, making it evident that of 100 deaths under circumstances arousing the coroner's suspicions, 85 per cent. were essentially medical in nature, and therefore required skilled medical investigation to decide their real nature, in addition to the medico-legal study of the 15 really medico-legal cases remaining.

In several of the suicides, autopsies were ordered to establish whether the patient was of unsound mind, and in one case fairly positive proof of this was obtained, large symmetrical cystic spots of softening being found in the brain.

In the cases of suspected infanticide autopsies were invariably

performed, the coroner rightly deciding that the proof of the child having breathed was indispensible. Under the old régime of a few years ago autopsies were never held in these cases, and frequently even the inquest was omitted.

In one case of death after a private surgical operation professional questions of a sufficiently delicate nature threatened to arise, but the friends having come to the conclusion that the surgeon had acted for the best withdrew their demand for an investigation, much to our relief.

Pneumonia was found to be a frequent cause of death under suspicious circumstances. In one case where a verdict of death from alcoholism had been rendered, and in consequence burial in consecrated ground was denied, a private autopsy showed that pneumonia was the cause and the restriction was withdrawn.

We do not think it well that private autopsies should be held in such cases, as it would appear to be only just that the Government should investigate the matter fully if the friends are not satisfied with the verdict, even if there is no crime. This would be decidedly more dignified than having the finding of the jury repeatedly shown to be wrong by the results of private autopsies afterwards made. In France an appeal of this kind always receives careful official consideration.

In one of our cases classed as debility and one of pneumonia, both in children, very clear evidence was forthcoming of neglect on the part of the parents. A number of other instances of this have come under the notice of the coroner. In these cases it is impossible to proceed in the absence of the evidence given by autopsies, as if the child really suffers from an incurable organic disease, and the life could not have been saved by ordinary medical and other care, criminal negligence could hardly be proved.

It may be remarked in this connection that our present law, which makes parental neglect amount either to manslaughter or nothing, makes it impossible to get incriminating verdicts from the juries. In England offences of this kind may be dealt with as misdemeanors and a moderate fine or short imprisonment inflicted after a summary trial. Such a change in our criminal

law would be the means of saving many young lives, and we would commend it to the attention of the Society for the Protection of Women and Children, or to our Citizens' League. We are glad to learn that a society is being formed to deal with this matter.

It will be noticed that no cases of criminal abortion were brought to light, although we know that they are frequently performed in Montreal. We have been told on reliable authority that competition has reduced the charge for this operation in certain quarters to ten dollars. Were an autopsy performed in all cases of suspicious death it is not unlikely that some deaths now assigned to natural causes would prove to be cases of this character. One of us knows of a case which happened some years ago and where a woman died of severe uterine hæmorrhage under most suspicious circumstances. In this case heart disease was stated to be the cause, upon the strength of an external examination.

In none of the cases of poisoning by gas was any proof of the presence of carbon monoxide asked for. One of the favourite verdicts still continues to be death from exposure. We have examined two of these externally and reported the absence of external signs of fatal disease and the necessity of an autopsy being held, but none was ordered in either case.

Coming finally to 20 verdicts of "natural causes" and "unknown causes" these might equally well have been rendered in at least 50 other cases, so far as can be learned from the records. We see no objection to the verdict of unknown causes being rendered, but how, when the cause is unknown, it can be stated to be natural, is a matter of which the explanation must be left to the juries who have found this verdict. A fine instance of the perspicacity of a jury was recently given in a case where everything pointed to poisoning by arsenic or corrosive sublimate. After the inquest was over, a private analysis found evidences of the presence of arsenic in this case, and the possibility of cholera morbus as a cause was definitely excluded at the autopsy. The jury found, "that the deceased came to his death either by cholera morbus or by poisoning. It is not pos-

sible, without making a chemical analysis, to determine which of these causes is the true one, and in the present case is of no consequence." In the words of Ruddigore, " It really doesn't matter ! "

In another recent case where an individual had disappeared for two days, at the end of that time his dead body being found locked up in a cottage, with the furniture strewn about and overturned and with marks of violence about his face, the verdict returned on the strength of the medical evidence was death from a convulsion due to chronic lead poisoning. This was one of the cases in which we were not summoned to examine the body.

In the case of bodies which have lain some time in water, putrefaction sets in with extreme rapidity. We have seen bodies freshly removed from water, and in which much could be made out by an examination made at once, putrify so rapidly that in a couple of hours they had become quite unrecognizable. Our only inconclusive autopsies were held upon drowned bodies which had thus putrefied.

The only satisfactory means of preventing this is by having a refrigerating chamber similar to that in use at the Paris Morgue, where bodies are promptly placed in a dry, cold atmosphere of about 5° Fahrenheit for 24 hours, and afterwards preserved indefinitely in a cold chamber kept at about 25° to 35°. This latter is furnished with a glass front and placed in a passage accessible at all times to the public. If necessary the bodies may be kept years in this manner, and may not only be identified at the end of that time, but if gradually thawed out an autopsy may be performed, with results almost as conclusive as on the fresh cadaver. In this way there is no nuisance or danger to health.

Comparing the results of the past six months with a period of six months in 1890, we find that then in a half-year, out of 123 inquests, in 16 cases the verdict was simply " found dead," and in not one of these was an autopsy made ; out of 7 cases of cerebral apoplexy no autopsies were made, and for one verdict of " cerebral congestion " no medical testimony was taken.

"Synecopy" of the heart was responsible for 7 deaths, no autopsies being ordered, and pulmonary congestion for 4 cases, of which 3 were in the case of unknown persons found dead—no autopsies. One case died of a "broken heart," and one of "angelis pectoris," 9 were found drowned, 4 accidentally drowned, and in 8 cases medical testimony was not called for.

To a certain extent, "*nous avons changé tout cela*," but even during the past six months some medical opinions have been given which is sufficiently remarkable. I mention a few only. "Sudden death from hepatic colic" in a child three days old, and without jaundice, is odd, to say the least. "Congestion of the brain caused by fatty degeneration of the heart" is also an original idea, and worthy of a niche in history. Sudden death from "metro-peritonitis" in a patient who seemed to be in perfect health up to the moment of her death, is an observation which it falls to the lot of very few to make. In one case, when the patient complained of pains in the region of the stomach for several days before death, and had a considerable hæmorrhage on the night of his death, we find the statement that death "*must* have been due to heart disease or pneumonia." In half of the cases where death is stated to have been due to heart disease, the medical men had never seen the cases during life. In no heart cases is any attempt made to note whether any objective signs of heart failure, *e.g.*, dropsy, clubbed nails, etc., were to be seen on the body. In one case, "congestion of the lungs" was diagnosed post-mortem from external examination by a physician who had never seen the man alive, but the secret of the process is not imparted.

In one case, where a death occurrred in a public institution, and the patient had been ill several days without the doctor having seen him, the jury are careful to state that "no blame is to be attached to the authorities, but, on the contrary, they deserve praise for the good care they took of the deceased." ("*Au contraire, des louages pour leur bon procédés à l'égard du défunt.*") This was certainly very considerate of the jury, but politeness may be carried too far.

In the case of a woman who died suddenly, death should

hardly have been put down to heart disease when nothing more definite than "oppression" had been complained of during life, although a doctor called in after death "had no objection to believe" that she died of this favourite lethal agent of coroners' courts. The only reason seems to be that the family were respectable people (*des braves gens.*) Something more tangible should be forthcoming as a proof of the cause of death when the imposing machinery of a Coroner's Court has once been set in motion, even in the case of the most respectable families. The same physician had equally little objection to believe the same thing in another case on equally slender grounds.

In this matter of determining the cause of death, coroners are placed in a very difficult position, because the law does not require them to find out the exact cause, but merely to see if a crime has been committed. To incur expense which does not lead to the detection of crime is considered one of the cardinal sins. That neighbours' testimony as to the character and habits of the suddenly deceased is of great value in affording what in law is called a "presumption" against crime there can be no doubt, and from study of the records I can testify to the great pains which our own coroner always takes to investigate this side of the question. In all the records the following points are carefully covered by the non-medical testimony:—

1. Marks of violence absent.

2. No external signs of poisoning.

3. Deceased stated to have eaten and drank only those things taken without ill effect by others.

4. Deceased did not, from conversation or behaviour, lead the friends to suppose that suicide was contemplated.

5. Deceased not known to have enemies.

Now, these points, important as they are, do not prove a natural death. The utmost interpretation which could be put upon them is "death from unknown causes, without suspicion of crime." This is better than attributing the death to unspecified "natural causes," and much better than ascribing it to an

imaginary heart disease which probably does not exist in the majority of cases.

The laity always suspect poison when death is sudden, but the medical profession knows that but very few poisons exist which can cause people to drop dead. The external evidence of poisoning is usually absent, or at least has not been present in any of the four cases we have examined. Absence of statements as to intended suicide would not seem to be of much value, judging from the fact that in only one of the 12 cases of suicide which have been investigated had any statement been made by the victims of their intention. People who *talk* suicide seldom commit suicide. The great disadvantage of all this sort of evidence is that it is mostly obtained from those who may be interested. As Coroner McMahon has often pointed out, people in large cities know very little about the doings of their neighbors, the conditions being quite different from those obtaining in country places. When death from unknown causes satisfies the ends of justice, well and good; but for any more explicit cause of death it would be simpler, instead of trying to exclude the many possible causes which are absent, to find out the one real cause.

We have a great admiration for juries in general, and admire the spirit of fairness invariably shown by our Canadian juries in particular, when human interests are really at stake. Their sympathy for the wronged and unfortunate is worthy of all praise, and they stand in no awe of the corporations which oppress us, but as an institution for finding out causes of death they are not an unqualified success.

When the cause of death is not clear without an autopsy we have made it our practice simply to state that fact. This has had the result, not of an increased number of autopsies, but in an increased number of deaths from unknown causes—presumably, visitation of God. We live in hopes that these numerous "visitations of God" may tend to hasten a millenium when autopsies will be more frequent.

The first and most important duty of the medical witness is to ascertain the cause of death, and it is satisfactory to know that

of the 26 autopsies held the cause of death could be definitely stated in every case except three, two where the bodies had remained a long time in the water and become greatly decomposed, and one shown to be due to poison. Even in these unpromising cases, however, the important medico-legal points could be determined at the autopsy. Presuming that the same precision as to the cause of death would have been attained in the remaining cases, we may assume that had autopsies been made at all the inquests about 180 deaths out of 201 would have been satisfactorily explained.

In 14 accidents, where external examinations only were allowed, the cause of death could only be made out satisfactorily in 6, 2 having broken necks, and 4 having the skulls completely crushed in. In the remainder we confined our statement to the fact that sufficiently severe external injuries existed to be compatible with the presence of fatal internal injuries not evident from external examination.

When no accident had taken place the external examination gave almost uniformly negative results. In 15 such cases we confined ourselves to the statement that it was impossible to state the cause of death from the external examination, and that if the determination of the cause of death was necessary an autopsy would have to be made. In no case did we make any attempt to guess at the probable cause.

In following strictly this rule we were guided by the principles laid down by Brouardel, probably the greatest of all living medico-legal experts, that the duty of the expert in medico-legal cases is to state either that a certain fact is proved, or that it is not proved, and to show sufficient facts in support of any conclusion drawn to make the testimony amount to a demonstration. Demonstrations, not opinions, are what is wanted. In no case is a witness in medico-legal cases justified in giving his opinion unless he can support it by statements of acts which establish its correctness. The great reputation now enjoyed by the French school of legal medicine is as much due to their strict adherence to this principle as to the brilliancy of their methods and the clearness of their logic.

Unfortunately the necessity for this scientific attitude is not yet appreciated by many of those who give evidence before coroners. If they do not know the cause of death they feel bound to hazard a guess and appear to know all about it. Much of the loose medical evidence given before coroners is due to the pertinacity with which juries will persist in asking whether the cause of death may not probably or possibly be due to such and such a thing. If the least admission is made they will promptly render a verdict to that effect, for which the medical witness becomes virtually responsible, though fully aware that there are a dozen other causes, any one of which may be the right one. The only resource of the medical witness is to refuse to say more than is established by the facts which have come under his notice. He is under no obligation to say what *might have been*, but only what *was* the case, if he can. "Of all sad words, the saddest are these—'it might have been,'" when they form part of medical evidence before coroners; and to this and unfounded medical testimony rather than neglect of juries must be held responsible for much that is regrettable in the past six months' evidence.

We have wondered not a little in reading the records of inquests why it is that medical witnesses so seldom make a written statement of the facts which they observe, and of the conclusions which they have drawn from them. In the past six months, apart from our own testimony, this does not appear to have been done in a single instance; and yet it would form the greatest safeguard a medical man could have against any future charge of giving a wrong opinion, as at any future time by consulting the record it could be shown why that particular opinion was given. This is the universal practice in other countries, and witnesses are obliged by law to state the facts upon which they form their opinions. There is no need for any reserve or hesitation in stating facts. Personally, in following this system we have found that time is saved and cross-examination shortened if a written report is submitted. We can confidently recommend this plan to others.

We constantly find that too little time is given to prepare a

report, because the jury has to meet at a certain time. In France a physician charged with an "expertise" is given as a rule a week in which to prepare his report, unless the matter is specially urgent, and a clear 24 hours should certainly be allowed.

It should be borne in mind that the medical opinion in an ordinary death certificate, where no grounds for suspicion existed, is only needed for general statistical purposes, and therefore *approximate* accuracy in a large number of cases suffices. Where, on the other hand, suspicion of a crime exists, what is wanted is, as nearly as possible, absolute accuracy in the one particular case. Slight inaccuracies in a mass of general statistical information tend to correct themselves. Serious inaccuracy in a single important criminal matter is quite inexcusable.

Great inconvenience is caused by the absence of an official clerk or secretary to take notes of the autopsy, so that the physician could always describe appearances while they were before his eyes. In other countries this is always attended to by a special official. Apart from the physical labour of writing out a long report, there is great danger that facts will be forgotten and error creep in if the memory is trusted to. Besides this, in the act of description new points are suggested for investigation which otherwise may be forgotten till it is too late.

Another defect is the absence of any system by which written instructions as to the nature of the information wanted is furnished the expert. In France and Germany a definite series of questions are asked the expert, and he thus knows what is expected of him and can give full information upon the vital points of the case. Official regulations are also greatly needed as to the technique to be followed in making an autopsy. Were there any instructions as to the advisability of some of the clothes of the deceased being removed before the autopsy is considered finished, we should not recently have heard of undertakers discovering bullet wounds unnoticed by the medical experts during their post-mortem.

Another important matter is that arrangements should be made by which the expert shall see the body before it has been

disturbed. In six months' work we have hardly seen a single body in the state and with the conditions and surroundings which existed at the time of death. It is almost always transported, undressed, placed in a coffin, or otherwise interfered with. In some instances embalming had even been done by the undertaker.

The chief complaint against the Coroner's Court in the past has been in regard to want of precision respecting the causes of death assigned. We have seen that in the past six months a material improvement in this respect has taken place, and a larger number of the causes of death are supported by some tangible evidence. This improvement, however, has been limited to those cases where autopsies have been performed, and until this is done in every case where inquests are held it is not likely that the verdicts of coroners' juries will be taken as representing the truth, the whole truth and nothing but the truth, about the deaths which they investigate. Apart from accidents attested to by eye-witnesses, about 90 per cent. of all the cases coming before the coroner are cases of natural death, and without the control afforded by the results of post-mortems and the counsel of a medical expert, it is not reasonable to expect a coroner having a legal training only to estimate the amount of credence to be attached to all the diverse medical evidence given in these cases. Taylor wrote, over thirty years ago: "As a general rule, it may be stated that inquests in which there is no medical examination of the body are a vain mockery, and the sooner the public becomes imbued with that idea the better it will be for society." Whether this still holds good of Montreal inquests may be judged from the results we have given of the past six months' work.

It is our experience that where an external or partial examination only is made the results are nearly or quite valueless. Hence, in cases where no autopsy is performed the investigation cannot be regarded as a serious one from a medical standpoint.

Although the number of autopsies held shows an increase as compared with former years, yet, even now, in 200 inquests

only 26 autopsies were held, or, in other words, only 12 per cent. of the cases of suspicious deaths received serious medical investigation, although nominally over 200 examinations of the body were made (and paid for.)

It may be stated that in 76 cases of acccident, forming 38 per cent. of the total, the death was obviously due to an accident attested to by eye-witnesses, and that a medical examination was superfluous. If it was superfluous, why was it made at all? If it was necessary, why was it not ordered to be made thoroughly? Why is it that autopsies are often hurriedly done, "while you wait," because the jury are in a hurry?

It appears that further reform in this matter is urgently necessary, and we may conclude by mentioning briefly the directions in which it should be made:—

1. Autopsies should be performed in all cases of suspicious or sudden death where the cause of death is doubtful.

2. The coroner should be allowed to decide whether an autopsy is necessary, and to order it to be performed, if advisable, before the jury meet. (English coroners, under Vic. 50 and 51, cap. 71, are allowed full discretion as to the ordering of autopsies and the time when they shall be held.)

3. In medical testimony, the observed facts upon which opinions are based should always be stated, preferably in writing.

The improvement which has been effected already is a hopeful indication for the future, and we hope in the report of the next six months' work to be able to show a decided advance over that of the past half year, which may be regarded in the light of an experiment.

Discussion.

Dr. Villeneuve drew attention especially three to points —that more autopsies should be made that autopsies should be complete, and only such medical opinions given as were based on well-established facts.

Coroner McMahon, who, being present, was requested to speak, said that if the medical part of the coroner's court was unsatisfactory, the legal part, also, was far from perfect. The coroner can only hold an inquest when there is a suspicion of

crime or guilty negligence; with the cause of death he has nothing to do. He has no power to order an autopsy before holding an inquest. The jury orders the autopsy, and if the coroner should take upon himself to order it, it must be on very good grounds. The coroner may understand perfectly that sudden death is always suspicious while the cause of it is unknown; but if the jury may not happen to look at the matter in the same light, the coroner, who has taken upon himself to order an autopsy, may have the pleasure of paying the expenses for the same out of his own pocket. Of late, where the jury were not willing to have an autopsy, and where the evidence did not show positively the cause of death, he has tried to get a verdict of "unknown causes." This is much better than the stereotyped "heart disease," etc., and is much more likely to attract attention to the imperfect nature of such proceedings.

Dr. Wesley Mills said that credit was due in large part to the Society for the improvements effected in the Coroner's Court, as these changes had been first advocated by the Society. The Society should take every occasion to urge reform in such matters upon the Government and the public. Work in this direction would greatly strengthen the position of the Society.

Dr. G. P. Girdwood said: If the cause of death was not established, what is the use of a Coroner's Court? If the law does not allow the coroner to make thorough investigations, it should be changed. He cited a case in his experience where sudden death occurred after a tablespoonful of what was thought to be Epsom salts, but which was shown by a private analysis to be nitrate of potassium, as showing the necessity for more frequent chemical analyses in obscure cases. In this case "heart disease" was the cause assigned by the jury. In another case, where four medical men were willing to swear that death was due to heart disease, the analysis, which was made by Dr. Girdwood, showed the presence of prussic acid. The Society should take some steps in urging upon the Government the necessity of making further reforms.

Dr. Lapthorn Smith said that it was quite clear that the

payment of the Coroner and medical experts should be by a fixed annual salary.

Upon motion of Dr. E. P. Lachapelle it was resolved that a committee be formed to study the question and report at a subsequent meeting of the Society.

Upon motion of Dr. Mills it was resolved that the committee be composed of Drs. Girdwood, Lachapelle and Adami, with power to add to their number.

A resolution of condolence in regard to the death of Dr. Archibald W. Campbell was proposed by Dr. J. C. Cameron and carried.

Annual Meeting, October 6th, 1893.

JAMES STEWART, M.D., President, in the Chair.

Removal of Goitre.—Dr. HINGSTON exhibited a large thyroid gland which he had removed, three days before, from a man aged 40. The growth had existed 20 years without causing inconvenience, but during the last two months he suffered from difficulty in breathing to an extent which made operation imperative. The operation performed was extirpation, which was done chiefly by the index finger. Twenty vessels were divided. The oozing was considerable, but the patient has done well. The specimen showed a large bi-lobed mass, divided by a constriction apparently corresponding to the isthmus. There appeared to be osseous change in the lower part of the gland where it rested on the trachea. Partial thyroidectomy had been performed successfully by Dr. G. E. Fenwick in Montreal 15 years ago, and total extirpation by Dr. Graw in Detroit 15 years ago.

Dr. PROUDFOOT stated that Dr. Wolfred Nelson had performed a thyroid extirpation in Montreal about 16 years ago.

Dr. ELDER had recently seen an operation of enucleation by Dr. Shepherd in the General Hospital. Only two vessels had to be tied.

The Treasurer, Dr. J. A. MACDONALD, reported that there was a balance of $411.10 on hand, the receipts having been $690.69 and the expenditure $443.36.

The Secretary, Dr. KENNETH CAMERON, reported that there had been 108 ordinary members at the beginning of the year,

14 new members had been elected, 3 died, and 1 resigned, making a present total of 118 ordinary members. Dr. D. McEachran had been elected a corresponding member during the year.

Eighteen regular meetings had been held with an average attendance of 31.33 per meeting, or two per meeting above the average of the previous year. The largest number at any meeting was 43, and the smallest 11.

The Council had met frequently during the year and had found much trouble in securing suitable rooms, but, through the kindness of Dr. Buller, the present very convenient rooms at No. 2426 St. Catherine street, had been rented.

The Librarian, Dr. T. D. Reed, reported that during a great part of the year the library had been inaccessible owing to the want of suitable premises. No additional journals had been subscribed to.

The following officers were elected for the ensuing year:—

President—Dr. James Bell.
1st Vice-President—Dr. A. D. Blackader.
2nd Vice-President—Dr. J. B. McConnell.
Secretary—Dr. Kenneth Cameron.
Treasurer—Dr. J. M. Jack.
Librarian—Dr. T. D. Reed.
Council—Drs. Jas. Stewart, Hingston and Proudfoot.

Dr. James Stewart, the retiring President, then read the

ANNUAL ADDRESS.

Before referring to the work and events of our past session, I wish to return my thanks to the members for having placed me in the honourable position of President, and for the unvaried kindness that I have received during my term of office.

The past has, in certain ways, been the most successful year of the Society. Eighteen meetings were held during the year, the average attendance being 31.33, this being the highest attendance in the history of the Society. The greatest number at any one meeting was 43, and the least 11.

During the year three of the members of the Society died.

Early in November we lost Dr. George Ross, a past President, and one of the foundation members of the Society. Dr. Ross'

death was not only a loss to the Society and city, but to the entire country. His wide and varied experience in the teaching and practice of medicine, and his many sterling qualities will make his loss felt for many a day. He performed his work nobly and well, and has left us a legacy in the uprightness of his conduct.

We have also to deplore the loss of two of our younger members—Drs. Hugh Berwick and Archie Campbell.

Hugh Berwick had little more than started in his chosen field of dental surgery, but even during that short time he proved himself an energetic and painstaking practitioner, and gave every promise of a successful career.

Dr. Archie Campbell, after a year's work in the Montreal General Hospital as a resident, spent some time abroad studying laryngology. While in Vienna he contracted a pleurisy, from which he never completely recovered. In spite of the state of his health, he continued to follow and practice his specialty for a year or more in this city. He was finally compelled, however, to give up his work, the immediate cause of his death being a general tuberculosis. Archie Campbell had a generous and kindly spirit, and would, if his health permitted, have been a successful practitioner.

One member resigned during the year. There are at present 125 on the roll, the greatest number in the history of the Society.

We have not only increased in quantity during the year, but I have no hesitation in saying that the quality of work is fully equal to, if not ahead of, previous years.

An important feature of the Society work during the past session was the report of the committee on infectious diseases. The committee waited on the Mayor and the members of the City Council. Whether the views urged by the Society have been acted on, I am not aware.

During the session we were favoured with three valuable papers on tuberculosis by Dr. McEachran, Prof. Adami and Dr. Blackader.

A committee was appointed to draw a series of rules for the

prevention of the spread of tuberculosis, and in conjunction with the committee of the French Society, these rules were revised, and published for distribution to the public.

In all, sixteen papers have been read before the Society, all of more or less importance, a few being valuable contributions.

Two papers on the new operation of symphysiotomy were read, one by Dr. Springle, the other by Dr. J. C. Cameron. That by Dr. Springle was the first operation of the kind in Canada. At subsequent meetings of the Society the patients on whom these operations were performed were exhibited.

Dr. Bell read a valuable paper entitled, "A Second Series of Transplantation of the Skin, after Thiersch's Method." We are also indebted to Dr. Gordon Campbell for a carefully prepared report on ether anæsthesia. Dr. Campbell's paper was founded on observations made by himself in one hundred cases of anæsthesia induced by ether inhaled by means of a Clover's inhaler. I believe Dr. Campbell's experience has had considerable influence in modifying the method hitherto generally in use in this city for the administration of ether.

Dr. Armstrong read a paper on "Abdominal Section After Labor," reporting three cases where he had performed operations.

The Society is indebted to Drs. Wyatt Johnston and George Villeneuve for a valuable statistical paper on "Six Months' Medical Evidence in the Coroner's Court."

From Dr. Birkett we had two papers, one a description of a number of anamalous cases of diphtheria, the second a valuable contribution on empyæma of the antrum of Highmore, illustrating the electric light as an aid to diagnosis in these cases.

Dr. Lapthorn Smith also read two papers, one entitled "Tuberculous Peritonitis," the other "A Report on a Number of Cases of Laparotomy."

Dr. McConnell read a paper on the "Treatment of Alcoholism by the Hypodermic Injections of the Nitrate of Strychnine."

From one of our younger members we were favoured with one of the best papers of the session. I refer to the paper on "Masked Tuberculosis," by Dr. Morrow.

Dr. Lafleur reported an interesting case of bradycardia, Dr. Gunn read a paper on gastric neurasthenia, and Dr. J. H. B. Allan one on empyæma.

The details of a number of important cases were given by several members. It appears to me that this part of our work is capable of being developed to the advantage of all. Cases are not infrequently occurring in the practice of every one, the details of which would be interesting and instructive. It is very important that such cases should be reported as briefly and as much to the point as possible. How frequent do we find a paper fail to interest from the writer's prolixity.

Dr. Adami reported a fatal case of pernicious anæmia, giving the chief morbid appearances found, as well as the report of Dr. Ruttan on the clinical composition of the blood in the case. This proved to be one of the most valuable contributions of our session.

Dr. Armstrong reported a case of appendicitis and sacro-iliac disease. This gave rise to animated discussion.

Dr. Bell reported a case of complete paralysis of one arm from the application of an Esmarch bandage.

Exhibition of Cases.

Fewer cases than usual were exhibited during the past session.

In the beginning of the session, Dr. Shepherd showed a patient upon whom he had performed an inter-scapulo-thoracic amputation, a case of dermatitis exfoliata, and also a very remarkable case of macroglossia.

Dr. Armstrong exhibited

(1) A man upon whom he had operated with good results for dislocation of the 11th and 12th dorsal vertebræ.

(2) A patient whose wrist joint he excised for tuberculous disease.

(3) Patient with a large scrotal hernia.

Dr. McConnell exhibited a case of exophthalmic goitre, presenting the typical symptoms of this disease.

The pathological specimens exhibited during the year were 46 in number. They may be divided as follows :—

Gynæcological, 17. Medical, 15. Surgical, 14.

We are greatly indebted to Dr. Adami for the trouble and care he has taken to have the pathological part of the Society's work well represented.

When I stop to think what trouble our pathologist has in preparing specimens of diseased tissue for our observation, the least we can do is to return him our thanks.

Among the specimens exhibited may be mentioned as presenting features of more than usual interest :—

1.) Specimens of a case of acute hæmorrhagic pancreatitis shown by Drs. Bell and Finley.

(2.) Dr. Adami exhibited: (1) A specimen of a cyst of the brain, and also (2) a very rare form of localized meningeal tuberculosis. (3) An enormous retro-peritoneal tumour. (4) Report on prostatic hypertrophy. (5) Preliminary on investigations he is now carrying on upon the relationship of vaccine and horse-pox.

Dr. Wyatt Johnston exhibited the stomach and intestines from two fatal cases of poisoning, one being from paris green, the other from sulphate of copper.

Drs. Gardner, Alloway, Armstrong, Adami and Smith were the chief exhibitors of gynæcological morbid specimens.

Two specimens of ovarian dermoids, two of ovarian abscess, three of ovarian cysts, one of ovarian carcinoma and one of tuberculosis of the ovary were shown.

Three specimens of uterine myomata and two of uterine carcinoma were also shown.

Dr. Birkett exhibited a rhinolite from the left nostril of a woman who had suffered from a chronic discharge for eight years.

This constitutes the report I have to make on our work of the past year.

PROCEEDINGS

OF THE

MONTREAL MEDICO-CHIRURGICAL SOCIETY

SESSION OF 1893-94.

OFFICERS FOR THE SESSION:

PRESIDENT	DR. JAMES BELL.
1ST VICE-PRESIDENT	DR. A. D. BLACKADER.
2nd VICE-PRESIDENT	DR. J. B. McCONNELL.
SECRETARY	DR. KENNETH CAMERON.
TREASURER	DR. J. M. JACK.
LIBRARIAN	DR. T. D. REED.
COUNCIL	DR. JAMES STEWART. DR. W. H. HINGSTON. DR. A. PROUDFOOT.

PROCEEDINGS

OF THE

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, Oct. 20th, 1893.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Drs. H. B. Carmichael, C. F. Martin, P. J. Hayes, and T. P Shaw were elected as ordinary members.

Enucleation of Tumour of the Thyroid Gland.—DR. SHEPHERD exhibited two patients upon whom he had performed this operation.

The first was performed on July 5th, 1893, by cutting through the capsule. The tumour was readily shelled out and the hæmorrhage was trifling. The growth had been rapid and had caused increasing difficulty of breathing. In the second case, operated on September 29th, 1893, the growth was larger and extended below the clavicle, but was easily shelled out. Surrounding it were a number of vessels spreading out like the branches of a tree, but none of them required tying. In the dissecting room he had recently seen a similar tumour which he had been able to easily shell out. After this operation there was no danger of myxœdema, and enucleation was likely to be the operation of the future.

The PRESIDENT remarked that in both Dr. Shepherd's cases the growths were cystic. He had seen Kraské enucleate an adenoid goitre extending below the clavicle. It had shelled out quite easily.

Fibroid Tumour of the Uterus DR. LAPTHORN SMITH showed a specimen which he had removed from an unmarried lady aged

34 years. The bowels had always been regular—an exceptional circumstance in such cases. A few weeks ago her legs became swollen. On examination, a dense fibroid tumour was found occupying the posterior wall of the uterus. The transverse diameter of uterine cavity was increased. Patient was anæmic. Abdominal hysterectomy was performed on October 2nd, 1893, the uterus being transfixed at the level of the internal os. No complications. Highest temperature was 100½° in mouth. The stump was dressed with boracic acid and was free from all unpleasant odour. Peritoneum, linea alba and skin were sutured separately. Convalescence was good.

Small fibroid tumours of the uterus and broad ligaments, Dr. Wm. Gardner exhibited this specimen removed from Mrs. L., aged 42, married 13 years, sent to him by Dr. W. Grant Stewart. The operation was exceptionally difficult owing to adhesion of the entire omentum to the anterior abdominal wall. Two nodular myomata were enucleated from the right broad ligament, the ovaries and tubes removed, and the uterus amputated by the flap method after ligating the uterine arteries. There was considerable oozing. A glass drain was introduced. Four hours later hæmorrhage commenced, but was checked by pouring a sterile solution of perchloride of iron into the tube. The tube was removed in 48 hours and recovery was steady. The growths in the broad ligament appeared to be distinct from the uterus.

Grape Tuberculosis of the Peritoneum, Dr. Adami exhibited a specimen received from Dr. Gardner.

Dr. Gardner had recently performed an exploratory laparotomy upon a young woman, where upon opening the abdomen, the intestines, omentum and the parietal peritoneum were found to be studded with nodules varying in size from a small pea to that of a grape. There must have been more than a thousand of these new growths, which were white, firm and globular. No large conglomerate growth could be found in connection with the ovaries, uterus, intestines or other organs. In removing a few of the growths from the mesentery they were easily separated from the surrounding tissue, and upon microscopic examination exhibited the characteristics of tubercles. The masses were subser-

ous, and were composed of tubercles of a peculiarly chronic type, many showing central necrosis, although the caseating masses did not coalesce, while all were surrounded with well formed layers of fibrous tissues. There were numerous giant cells, and further study demonstrated the presence of numerous tubercle bacilli. Dr. Adami described this as "grape tuberculosis" from its similarity to the "grape disease" or tuberculosis of cattle. This is a chronic form of tuberculosis. He exhibited the liver of a calf just received by him which upon its surface showed similar grape like masses of tubercles.

Dr. GARDNER stated that the patient had been sent to him by Dr. Ewing, of Hawkesbury. The nodular masses and thickened omentum could be made out by palpation. After watching the case for three weeks tuberculosis was suspected, there being physical signs in the lungs and a rise of one degree or more in the evening temperature. Operation was performed, as experience had taught that peritoneal tuberculosis was a remediable condition.

Dr. SHEPHERD referred to a man under his care three or four years ago, where the temperature reached 104° daily for several weeks and hard growths could be felt through the abdominal walls. On operation he had found a condition almost identical with the specimen shown. Some of the masses were examined microscopically and pronounced tuberculous. From the day of operation, he commenced to improve. The temperature soon fell, and a year later he had gained twenty pounds in weight.

Dr. MILLS thought the benefit was explainable through the effect of the operation upon the nervous system thus indirectly changing the metabolism of the whole organism.

Dr. SMITH thought the improvement might be due to the irritation caused by the entrance of air.

Dr. LAFLEUR was surprised to find this subject regarded as new. Dr. Osler in his monograph on tuberculous peritonitis states that through miliary tuberculosis does not get well, chronic forms always improve. Ordinary puncture does not have the same effect as incision. He considered that spontaneous healing of peritoneal tuberculosis also took place.

Dr. ADAMI considered that the "shock" which follows upon abdominal incision sufficed to explain the retrogression of the

tubercles. It is well known that exposure of the peritoneum leads to an inflammatory condition of the same, to dilatation of the vessels and increased blood supply. As Professor Roy had recently shown in "shock" produced by various means, the specific gravity of the blood rises rapidly and is accompanied by increased exudation into the peritoneal cavity and dilatation of the mesentery and intestinal vessels. He held that with this inflammatory or sub-inflammatory condition there was increased nutrition of the tubercular areas, improved state of the cells and thereby arrested advance of the tubercular process, and cicatricial tissue developed so as to encapsule the tubercles. In the chronic cases such as that exhibited by him there was already a tendency to this, so that slightly increased vascularity and improved nutrition would turn the scale in favour of the organism and against the micro-organism.

Dr. F. W. Campbell thought that the system could be permanently influenced by shock and gave illustrations in support of this view.

Ovarian Dermoid.—Dr. Adami exhibited a large dermoid which had been sent to him by Dr. W. Gardner. The tumour measured six inches in diameter; the walls outside showed numerous adhesions. Upon opening the cyst it was found to be filled with thick fluid with fatty particles floating in it, and when this had escaped the cavity was seen to contain a large amount of fatty material and debris, and a relatively very large quantity of loose hair tending to be arranged in balls. The walls were irregularly thickened and in them was a large bone of irregular shape, consisting of a main portion $2\frac{1}{4}$ in. in length and $\frac{1}{2}$ in. in thickness. From this at one extremity projected two wings, of which the larger was 3 in. long, while the smaller bore a clump of three well developed teeth projecting into the cyst. At the other extremity was given off a line of three small flattened bony plates united together by fibrous tissue, in all $2\frac{1}{5}$ in. long. The main mass of bone was hollow, containing towards its outer surface a subsidiary cyst also bearing hair. Into it projected from the bony floor a cystic glandular mass. This large bony mass could easily be felt upon abdominal palpation before the operation. While small bony developments in ovarian dermoids

are not uncommon, it is extremely rare to obtain so large a mass as the one here described.

Dr. Wm. Gardner stated that clinically the only point of interest was that the torsion of the pedicle was not extreme enough to interfere with the circulation.

Fibroid tumour from the sheath of the Femoral artery, with secondary growth within the femur—Dr. Adami This tumour had been removed by Dr. Roddick, who finding upon his first attempt at simple removal that it was intimately connected with the sheath of the lower end of the femoral artery, determined to amputate the leg of the patient, an elderly lady, and cut across the femur at the junction of the upper and middle thirds of the bone. The tumour reached Dr. Adami in bad condition, having accidentally been laid aside. Its structure was that of a slow growing spindle celled sarcoma, which in parts was more truly fibromatous, and which throughout showed a tendency to a fasciate arrangement of the constituent cells. No secondary growth had been made out anywhere, but upon making a longitudinal section of the removed femur there was discovered a white mass, the size of a Barcelona nut, lying somewhat loosely in the medulla of what corresponded to the lower part of the middle third of the bone, and this upon microscopic examination was seen to be of sarcomatous nature, being formed of spindle cells, of typical form towards the periphery, but more internally possessing nuclei which might at first sight be mistaken for those of a myoma, their length being remarkable.

Perforation of the Femoral artery and vein in Hunter's canal by a bullet wound.—Dr. Bell. On Sept. 16th, 1893, the patient, a boy, was shot in the thigh by a 16-calibre ball. On bandaging the bleeding ceased, but the pain in the thigh prevented walking. A few days later he entered hospital, when a fusiform swelling in the region of Hunter's canal was observed. There was no diffuse pulsation, but a very loud bruit on auscultation. One and a half inches of both vessels were removed. On the fifth day pulsation could be felt in the posterior tibial artery.

Appendicitis.—Dr. James Bell exhibited specimens from the following seven cases:

1. Recurrent case. Operation three weeks after the second attack. Perforation with local abscess.

2. Operation 18 hours after the onset. Appendix greatly dilated and quite gangrenous.

3. Operation 48 hours after onset. Widespread abdominal pain. The appendix looked normal externally, but was full of grumous bloody fluid.

The adjoining lymph glands were enlarged and soft and the peritoneum œdematous. It appeared to be a case of early catharrhal appendicitis with severe lymphangitis.

4. Operation 50 hours after onset. Appendix gangrenous.

5. Operation 41 hours after onset. Appendix perforated and gangrenous.

6. Operation one week after onset. Appendix perforated. The patient was in a septic condition and subsequently died.

7. Operation two weeks after onset. Appendix perforated with local abscess. The patient died apparently from toxæmia rather than septicæmia.

Of the gangrenous cases none had died, and of the catarrhal cases, two died; so that the milder forms appeared to be by no means so free from danger as is generally thought. The marked symptoms in gangrenous cases lead to early operation while the milder forms are neglected.

Dr. Shepherd referred to a case where the appendix was apparently only a little thickened. Dr. Johnston had found it filled with pus and blood. He had been unfortunate with his gangrenous cases, three having died unrelieved by the operation. Operation may be performed too early, before there is a zone of delimitation formed.

Enlarged glands pressing upon the trachea from a case of Hodgkin's disease.—Dr. Finley exhibited the specimens obtained at an autopsy upon a man aged 27, and gave an account of the case. (The patient had been previously brought before the society in Oct. 1890, by the late Dr. R. L. MacDonnell, and the case had been published in the International Clinics for Oct. 1891.) [Proceedings—Vol. V., page 94.]

The disease had lasted 7 years. The earliest symptom was

the occurrence of urgent attacks of dyspnœa. After an interval of two years these attacks recurred and enlargement of the cervical lymph glands was noted. The spleen was then enlarged. The removal of some glands from behind the sternum by Dr. Shepherd, gave relief. In 1891 there was stridor and dyspnœa, with enlargement of the cervical and axillary lymph glands the size of which varied considerably from time to time. In Dec. '92, the inguinal glands enlarged. Six months before death the man became very weak and anæmic, though temporary improvement followed the administration of Fowler's solution. In June '92, the blood count gave 3,317,000 red cells, with white cells 1:50, mostly polynuclear. In Dec. '92, the red cells were 2,571,000, no leucocytosis. In June '93, there was effusion into left pleura, and the patient died in orthopnœa. At the autopsy body was emaciated, and showed (arsenical?) pigmentation of skin. The trachea surrounded by a cluster of enlarged glands as big as a fœtal head, the lumen of trachea being compressed to a mere chink and the mucosa eroded. Some of the glands presented softened centres. Retro-peritoneal and pelvic glands enlarged to masses of considerable size. Spleen three times normal size. Growth infiltrated lower lobe of left lung. Six secondary nodules in right lung. Bone marrow of ribs and sternum grayish red. The seven years' duration of the case was remarkable. In 50 cases tabulated by Gowers only one exceeded 5 years. Osler gives the duration as from 3 to 4 months to as many years. Possibly the continued use of arsenic had lengthened life.

Resignation.—The resignation of Dr. A. A. Foucher was accepted.

Stated Meeting, Nov. 3rd, 1893.

James Bell, M.D., President, in the Chair.

Drs. G. A. Berwick and J. T. Reid were elected members of the Society.

Removal of Gasserian Ganglion for facial neuralgia.—Dr. James Bell exhibited a woman upon whom he had performed this operation for intractable facial neuralgia. Krause's operation was performed, an incision being made from the external angular process to a point in front of the tragus of the ear. The zygoma was removed with bone forceps. In tre-

phining the skull the middle meningeal artery was seized. It ran in a foramen, and therefore some bone had to be chipped away. The dura was separated from the bone down to the petrous region, the brain being held away with the finger. The second and third branches of the fifth nerve were divided at the foramina, and reflected backward with the Gasserian ganglion till the trunk of the nerve could be cut and the ganglion and attached nerves dragged away with the forceps. To familiarize himself with the operation he had practised it on the cadaver. The risks of operation were (1) wounding the adjacent vessels and (2) trophic changes in the eye-ball. To avoid the latter the eyelids were sutured for a few days. Except for loss of power of the temporal muscle, paralysis of one side of the face, and slight giddiness lasting a few weeks there were no bad symptoms, and she had been free of pain since the operation. Previously the nerve had been stretched without any relief being obtained. In the operation known as "Rose's" the foramen ovale is approached from the base of the skull by an incision over the parotid region. This operation is more difficult. Five cases are reported by Mr. Rose and six are reported of Krause's operation—which should really be called Hartley's operation, Hartley, of New York, being the first to perform it. It was too early to judge fully of the results, but cases were reported free of pain after 22 months where stretching and external neurotomy had failed.

Discussion—Dr. Stewart had seen the patient and regarded medical treatment as useless. The pain was intense and had been worse since the stretching. It was hard to say whether the cure would be permanent.

Dr. Mills thought that from the important nerves involved the dizziness noted might be owing to the operation.

Dr. Lapthorn Smith had found benefit result from constitutional treatment by iron and tonics in cases of tic.

Dr. Bell, in reply to Dr. Mills, said that dizziness is common in persons confined to bed after any operation.

A Rare Form of Sub-diaphragmatic abscess—Dr. Adami gave the following report:

It is not a little noticeable how silent are even the best and most modern text books upon the subject of sub-diaphragmatic abscess, with a silence that is out of proportion to its

diagnostic and clinical interest, and it may be added to its relative frequency. Doubtless the fact that the subject cannot be treated under the heading of any one special organ, leads to its being neglected in well-ordered text books so that information has still to be gathered from scattered papers. Thus it happens that although I am acquainted with a fair number of cases in which the original disturbance has originated in connection with the liver, kidney, spleen or stomach, I have been able to find none presenting the anatomical features of the case here recorded, though such must exist.*

The patient, L. F , sixty-five years old, was received into the General Hospital, under Dr. Molson, upon October 3rd, in a state of semi-collapse. All that could be ascertained as to his previous history was that for the past four or five days he had been suffering from pain in the epigastrium, thirst, restlessness and pains in the joints. He died within twenty-four hours, before time had been allowed for a full diagnosis. The pulse was almost imperceptible, there was a large area of cardiac dulness, the heart sounds could scarcely be heard, while no murmur could be detected. Over the region of the liver in front there was acute pain upon pressure. The respiratory sounds were tubular. A provisional diagnosis was made of pericarditis.

At the autopsy performed upon October 5th, the following were the more important conditions observed. The skin of the whole body had a slight yellowish tinge. The pleural cavities contained about eight ounces of clear serum. The lungs were very œdematous, showed some slight signs of anthracosis, and in either apex were found evidences of an old and cicatrised tuberculous condition. The pericardial cavity was enormously distended, the fluid was milky with numerous flocculi floating therein. The heart was covered over with a layer of inflammatory lymph ; and its cavities were filled with well-formed clots, firm and rather pale, together with some fluid blood. The lower and inner half of the parietal pericardium was thickened, and upon cutting into it, down upon the diaphragm

† Petri, Dissertation, Berlin, 1878, quotes a case of sub-diaphragmatic perforation of the œsophagus following upon cancer, but of the extent of the succeeding inflammation I cannot clearly learn, not having the original by me

an abscess cavity was exposed lying between diaphragm and pericardium. This was of irregular shape and contained a quantity of thick creamy pus. Upon inspecting the abdomen, a large abscess was found beneath the diaphragm, having in its centre the abdominal end of the œsophagus and the cardiac end of the stomach. This extended to the left edge and under the surface of the left lobe of the liver on the one side ; on the other it almost touched the splenic flexure of the colon and the surface of the spleen. It was filled with a thinner greyish pus, and communicated through the diaphragm with the supra-diaphragmatic abscess. The cardiac orifice of the stomach was discovered to be greatly stenosed and ulcerated. Further inspection revealed that there was a ring of cancerous growth implicating the gastric mucous membrane, and forming a ring varying in breadth from 2 to 3 cm. around the cardiac orifice ; the growth extended a short distance up the œsophagus. Microscopical examination showed the cancer to be primarily gastric —that is to say, it was of the nature of a columnar celled carcinoma. It infiltrated all the coats of the stomach.

No actual perforation of the stomach or œsophagus was to be discovered.

It would seem evident that the history of the case was one primarily of cancer of the cardiac orifice of the stomach leading to stenosis ; ulceration of the cancer, and extension of the septic process through to the serous surface of the organ—or, it may have been, perforation above the stenosed area by a fish bone or other fine spicule, the passage closing behind the foreign body ; suppuration around the termination of the œsophagus leading to a sub-diaphragmatic abscess ; extension of the process through the diaphragm ; inflammation of some little standing of the outer layers of the parietal pericardium ; extension through the pericardium ; purulent pericarditis ; death.

Judging from the condition of the sub-diaphragmatic abscess, and the want of well-defined boundary, this had of late been extending rapidly.

There is a possible alternative that the supra-diaphragmatic abscess with its more creamy pus was of the earlier origin, but

this I think is improbable. The presence of the gastro-œsophageal carcinoma in such characteristic relationship to the surrounding sub-diaphragmatic abscess, renders the former the more likely course of events.

Papillomatous Cyst of the Ovary—Ovario-Hysterectomy—Dr. Lapthorn Smith showed this specimen which he had removed from Mrs. E., aged 30. Enlargement of the abdomen was first noticed by her husband on their wedding day, and wrongly attributed to pregnancy. Examination showed that the uterus was not enlarged, but that the whole of the pelvis was occupied by a large cystic tumour. After a few weeks preparatory treatment, laparotomy was performed in Oct. 4th, 1893. The lower part of the cyst was adherent to the Douglas fossa. The uterus was removed with the tumour at the level of the internal os. The abdomen was flushed with water at 100° F., and drainage tube inserted. The patient made an excellent recovery. The tumour is a multilocular cyst of the left ovary, the inner surface covered with warty growths. Both ovaries and uterus closely adherent and line of separation is difficult to determine. Fallopian tubes were free.

An Inferior Maxilla as a Means of Identification.—Dr. Wyatt Johnston showed the inferior maxilla of a drowned woman pronounced by coroner's jury to be a girl of 18, missing for some months, and was claimed as identified by an article of jewelry. The wisdom teeth in this case were fully developed and corresponded with those of persons thirty years of age. A malformation of the bicuspids described in the missing girl was also present in the specimen, but it was in all probability a case of mistaken identity in spite of the coincidence of the jewelry and malformation of the teeth.

Saline enemata in post-partum hæmorrhage—Dr. John A. Hutchinson read the following report:

I wish here to refer to a case of severe post-partum hæmorrhage occurring in practice a short time ago, which illustrates the beneficial effects of saline enemata.

I was called late one night to see Mrs. S., who had an abortion at the second month, and had bled profusely for several hours. On examination she was found to be much collapsed, and presented the appearance of one near death from

loss of blood. She was very blanched and anæmic, with a pulse of 140, weak and thready, sighing respiration and partially unconscious. The bleeding had stopped, but there was danger of death unless something was done to aid the circulation.

It seemed a favourable case for transfusion, and I spoke to Dr. Roddick with a view to having this done. He advised, before doing this, to try saline enemata. This I did and used the same solution as is now used for transfusion into a vein or artery, that is,

Sodium chloride grs. xcii.
Liquor soda m $\overline{\text{x x}}$
Aqua O ii

Half of this solution was injected and well retained, and in two hours after the other pint was given and retained.

The temperature of the solution was 98°F.

The hips were raised to allow the fiuid to gravitate up the bowels.

A marked improvement resulted, both in pulse and respiration. A slight rigor ensued, followed by rise of temperature. Since that tiine the patient has made a good recovery.

The advantage of this treatment over transfusion is very apparent in the fact that it can be done at once, as the solution is easily obtained, and also easily administered, while there is some danger in transfusion, particularly as air may get into the vein or artery. Again it requires some training in manipulation that the every day practitioner may not have, and the necessary instruments are not always at hand when wanted.

Since this case occurred, I find in the British Med. Journal of the 14th of October, that Warman reports the treating of 28 cases of post-partum hæmorrhage in this way. In his cases he only uses a teaspoonful of salt to a quart of water, and at the temperature of the room, which he thinks causes it to have a more rapid effect than at a higher temperature.

He also states that the saline solution has marked hæmostatic properties, and recommends its use in all hæmorrhages except those from intestines.

I have reported this case because I think that in emergencies

of this kind, this treatment has not received the attention its importance demands. Most cases are treated by stimulants and nourishment, if transfusion is not done, but by the absorption of this saline in the bowel, the blood vessels are quickly supplied with a solution that certainly takes the place of the lost blood at a critical time for the patient.

Hibernation and allied states in Animals and Man—Dr. MILLS read a paper on the subject, published in the Transactions of the Royal Society of Canada, 1892, Section IV, page 49.

Besides studying cold-blooded animals and bats, Dr. Mills had made observations extending over a period of five years on woodchucks, one of which presented a drowsy or torpid condition from November to April, independently of conditions of food and warmth. Another woodchuck did not hibernate at all even when kept in the cold. Three remarkable instances of profound lethargy in the human subject were also studied under the direction of Dr. Mills. One of these, known as Sleepy Joe, aged 60, would sleep for weeks at a time, waking only to take food and void his excretions. Another case, that of John T., of a neurotic family, who had been the subject of melancholia. For the past 20 years he remained in a somnolent condition from September to June in each year. His temperature was observed to be 96° on one occasion. Once he was aroused by application of an electric battery, but subsequently this failed to disturb him. The third case was studied with Dr. Clark, of Kingston Asylum. The patient, a woman of over 60, was lethargic for nearly 20 years. Appetite was usually good. The urine contained one-third the normal amount of phosphates. An autopsy was obtained, the brain being found healthy. The lungs contained tubercles.

The discussion upon this paper was postponed till the next meeting.

Stated Meeting, Nov. 17th, 1893.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Dr. George Villeneuve and Dr. R. Tait Mackenzie were elected members.

Operation of Pyloroplasty.—Dr. SHEPHERD exhibited a man aged 29, on whom he had performed the above operation at

the Montreal General Hospital in July, 1893. The patient had suffered from his stomach, more or less, for the past fifteen years, having had frequent attacks of acute gastritis. In the intervals he was never comfortable. For the past three months he had suffered severely from pains, eructation of gases and vomiting and had lost much flesh, weighing only 119 pounds, where previously he weighed 175 pounds. He was at first admitted into the medical ward under Dr. Wilkins, who diagnosed a dilated stomach, due to non-malignant stenosis of the pylorus and advised operative measures. The patient was transferred to the surgical ward under Dr. Shepherd, who, after observing him for some days and thoroughly washing out his stomach, came to the conclusion that the case was a suitable one for the performance of the operation of pyloroplasty, an operation which was almost simultaneously conceived by Heineke, of Erlengen, and Mikulicz. This is performed by cutting the anterior wall of the strictured pylorus and extending the incision about an inch towards the stomach and the same distance in the direction of the duodenum. The straight incisions in the long axis of the pylorus divides the stricture and by retracting the margins of the wound on each side of centre with hooks and suturing the wound in a transverse direction the contracted pylorus becomes the posterior wall of a new pylorus. The anterior wall of the new pylorus is thus made up of tissue taken partly from the anterior wall of the stomach and partly from the anterior wall of the duodenum.

In Dr. Shepherd's case the pyloric opening was so small that it would only admit an ordinary sized director and the pylorus was surrounded by a mass of cicatricial tissue the size of an egg. The above described operation was performed on July 28, 1894. Owing to the thickness of the cicatricial tissue the suturing was somewhat difficult. Two rows of sutures were used, the superficial row being Lembert's sutures. The patient made an uneventful recovery; he was fed by the rectum for three days and afterwards carefully fed by the mouth. He left the hospital at the end of four weeks and when presented to the Society seemed in perfect health, weighing 180 pounds (a gain of 60 pounds). He said he never felt better in his life, his digestion giving him now no trouble.

Discussion—Dr. Wilkins said that while under his care the patient had not improved on a peptonized diet. He had satisfied himself that the disease was non-malignant and was due simply to the cicatrization of an ulcer. This diagnosis has been confirmed by the increase in weight since the operation. He congratulated Dr. Shepherd on the result.

Dr. Wesley Mills said the persistence of vomiting showed that anti-peristalsis of the stomach took place. The history did not clearly show whether the increase in weight was due to increased ingestion of food or improved powers of absorption.

Cancerous Tumour Arising from the sudoriparous glands—Dr. C. F. Martin showed this specimen and gave the history :

The patient from whom the above growth was removed was a contractor, 45 years of age, having a history of previous good health, with the exception of occasional attacks of dyspepsia. No history of syphilis, nor was there any family history of cancer or other tumour.

Early in 1890, the patient observed, for the first time, a small lump in the left groin, in size equal to a bean, perfectly painless, which he attributed to a blow received in this region some months previously.

The growth was regarded as some affection of the sebaceous glands, and no treatment other than the application of iodine was adopted for over a year, there being no appreciable alteration in the character of the tumour during that time.

Towards the end of 1892 it gradually increased in size, and was now for the first time painful, the patient at times suffering intensely. The skin too showed signs of irritation and became adherent to the growth. This condition became progressively worse and removal was recommended and performed November, 1893, by Dr. Roddick, who forthwith sent the tumour to the McGill Pathological Laboratory.

On examination the growth was found irregularly spherical in shape, 1½ inches in diameter. On section it offered considerable resistance to the knife, while on the cut surface were seen numerous small points from which a greyish turbid fluid escaped. This fluid examined under the microscope presented

masses of irregularly rounded or oval cells, slightly larger than pus cells, and many undergoing fatty and granular degeneration.

Stained sections of the tumour cut so as to include the adherent skin, showed the epidermis to be only slightly affected, there being but a slight proliferation of the epithelium, while beneath it was increased fibrous tissue, a condition of chronic inflammation. Beneath this, in the subcutaneous tissue, was seen the tumour proper, presenting the usual appearance of a simple carcinoma, masses of large irregular cells amid extensive areas of fibrous tissue, in an alveolar arrangement.

On closer inspection of the parts, it was found that the growth took its origin from the epithelial lining of the sudoriparous glands, in whose ducts could be seen the various stages of proliferation of cells, while in the neighboring regions were the appearances of an alveolar cancer. The sebaceous glands presented no abnormal appearance, nor was there any evidence to point to the origin of the tumour, other than that suggested.

Although many cases of adenoma of the sweat glands are said to have been falsely regarded as carcinomatous, there is, however, in the present instance so typical an appearance of an alveolar carcinoma that such an error is quite impossible and the tumour cannot be regarded other than as a cancer arising from the sudoriparous glands.

Dr. ADAMI stated that the tumour had at first been regarded by Dr. Roddick as an enlarged sebaceous gland. Subsequently a diagnosis of epithelioma was made. He had recently shown an analogous case, when what looked like an epithelioma of the tongue proved to be a scirrhus arising from some of the muciparous glands of that organ.

Chronic abscess of bone—Dr. ADAMI showed a knee joint resected by Dr. Armstrong at the Montreal General Hospital during the past summer. The patient apparently recovered, but sinuses formed and kept on discharging in increasing quantities. The man became emaciated. Amputation was performed by Dr. Sutherland two weeks ago. Union was pretty well advanced, but was entirely fibrous in nature. There was still a slight movement between the bones. On

making a section a number of small abscesses connecting with one another were found situated in the lower extremity of the femur and connected with the region between the two bones from whence they discharged. No tubercle bacilli were found. The condition appeared to be one of chronic suppuration. The question was whether these abscesses were the result of old foci of disease not detected at the time of operation.

Dr. Armstrong stated that the patient, a lumberman about 35 years of age, had sustained some slight injury of the joint, but was able to continue work for about six months. The joint was then found swollen and painful and evidently extensively diseased. Immobilization of the limb was tried without benefit, and so Dr. Fenwick's excision operation was performed. Some sinuses which persisted were scraped under ether two or three times, without benefit. He was surprised to learn that no tubercle was found, as at the time of excision the joint had all the naked eye appearances of tuberculous disease.

Dr. Bell suggested the possibility of the condition being originally tuberculous, the bacilli having subsequently become destroyed. He was of opinion that the abscesses were there at the time of operation, but did not communicate with the joint. All surgeons know that when a thin slice is sawn off the end of a bone little foci of disease are noticed in the new surface exposed. He had always thought it strange that more of these little pockets did not lie higher up in the bone; in this case it looked as if they had.

Dr. Shepherd thought that the abscesses were present at the time of operation. The pain, at the time, was much more severe than seemed called for by the extent of the joint disease.

Tuberculosis of the Liver and Oviduct of a pigeon—Dr. Wesley Mills exhibited the specimen, showing what extensive disease could exist in domestic fowls in apparent good health. The bird seemed quite well till a few days before its death.

The discussion was postponed pending a report from the pathologist.

Pyosalpinx and Gonorrhœal Arthritis—Dr. Lapthorn Smith exhibited a specimen of double pyosalpinx in a woman aged 42, suffering from gonorrhœal rheumatism of the right knee joint. The patient had been ill ever since her marriage, 10 years before. Examination showed the uterine appendages

filling Douglas pouch and forming a tender fluctuating mass the size of an orange. While in hospital preparatory to operation in June, 1893, she suddenly developed high fever, swelling of the first joint of the right fore-finger and scalding in micturition. Next day the right knee became swollen and painful. There was a yellow purulent discharge from the urethra and vulvo-vaginal glands. Exploratory puncture of the knee joint yielded an opalescent serum. This was not examined for gonococci. After seven weeks the joint was still stiff and painful. Temperature then normal. In October, 1893, cœliotomy was done and the appendages removed. The tubes were found distended with pus and closely adherent. Recovery was good. The operation seemed to improve at once the condition of the knee joint. The husband admitted having recurrent attacks of gonorrhœa, the last occurring shortly before the wife developed the above mentioned arthritic attack. The gonorrhœal infection probably affected the parenchyma of the uterus which should really have been extirpated. The pathology and treatment of gonorrhœal rheumatism was then discussed by Dr. Smith.

Dr. Alloway said he differed from Dr. Smith as regards the interpretation of the metastasis. He thought the disease of the knee joint not gonorrhœal but pyæmic, and that the subsequent occurrence of inflammation in the finger joints confirmed this view. He had seen several times, metastasis of this nature following pelvic disease. In one case seen with Dr. Shepherd, where there was suppuration of both knee joints, the remains of a necrotic placenta were found in the uterus. On scraping the uterus the patient recovered. He did not think the joint disease in Dr. Smith's case was due to the gonococcus.

Dr. Smith in reply stated that if his case had been pyæmic, pus would have been found in the joint, instead of only an opalescent fluid. He had himself thought of pyæmia, but the fact of the pus tubes having been there for ten years without any metastasis, and the knee affection appearing after an attack of gonorrhœa made him change his opinion.

Discussion on Dr. Mills' paper on Hibernation—Dr. F. W Campbell mentioned a case of duodenal ulcer where the sub

jective symptoms had disappeared under the mental condition induced by a favourable (though wrong) diagnosis being given and had returned again only when the correctness of the diagnosis was insisted upon. The diagnosis was confirmed by autopsy. The mental condition seemed to determine whether pain, etc., was felt or not.

Dr. GIRDWOOD told of the doings of two woodchucks formerly in his possession. These animals did not hibernate.

Dr. ADAMI asked if Dr. Mills had tried the experiment of feeding the animals abundantly.

Dr. MILLS, in reply, stated that he had not been able to prevent hibernation by good feeding. He referred to some interesting work by Carlier on the histology of the hedge-hog, showing that the tissues during hibernation differed from these in the normal state in the following particulars:—(1) They were less readily acted on by nuclear stains. (2) The cells were smaller. (3) The leucocytes of the blood were diminished in number. This latter point would, theoretically, make the animal more susceptible to infection than when not hibernating. His object in making these studies was to see if a general law of relation could be established between hibernation and sleep. It was possible that primæval animals lived in a state analogous to hibernation.

Statistics of Homicide in American cities—Dr. WYATT JOHNSTON who read a paper on this subject, had found the annual number of homicides (including manslaughter and infanticide) per 10,000 living to be approximately as follows: Central District of London, .15; Vienna, .18; Paris, .19; Philadelphia and Liverpool, .22; Montreal, .24; Buffalo, .33; New York, .35; Boston, .43; Toronto, .50; Pittsburg, .51; Chicago, .65; Cleveland, .66; Birmingham, .89; St. Louis, 1.38; Louisville, 1.58; Charleston, 2.00. These estimates were based on the findings of inquests, not of trials. The greater proportion of homicides occurred in the Southern States, where a large and lawless negro element existed and where concealed weapons were habitually carried. The apparent low homicide rate in great European cities was a matter of surprise. The low rate in Montreal might be due to the peaceable character of the people and the absence of concealed weapons rather than to

cases being overlooked, as in other cities the majority of homicides were from such easily recognized causes as cuts, blows and stabs. Abortion and poisoning were forms likely to be overlooked. and a proper system of death certification would be a great check upon homicides of this kind. In Boston a system of investigation of all deaths from peritonitis in all women of the child bearing age had led to the detection of many cases of abortion previously unnoticed.

Mr. QUINN, Q.C., Crown Prosecutor, who was present, said he thought the composition of coroners' juries in various places would tend to affect the statistics. A low status of jury would lessen the number of homicide verdicts. Montreal juries rarely gave a verdict in accordance with the evidence. In the case of large cities like London, many homicides probably occurred when the bodies were never found, and this might partly explain the apparently low proportion. The means of concealing crime increased with the population. He had reason to believe that abortion is more common in Montreal that was supposed. The criminal death rate reported in Montreal was not the true one. All deaths should be reported to the health office, and, unless properly accounted for, the matter should be placed in the hands of a medical office for thorough medico-legal investigation.

Dr. GIRDWOOD agreed with Mr. Quinn, as to death certification. In the Hooper case, a certificate was obtained from a physician who knew nothing about the woman or the death. No medical man should give a certificate unless he had seen the person during life and had made some diagnosis.

Dr. SHEPHERD believed that many cases reported as stillbirth were really cases of infanticide.

Death Certification—The Secretary read a communication from Dr. LABERGE, city health officer, asking for the co-operation of the Society in securing an amendment to the city charter in the matter of certification.

Dr. LABERGE'S letter pointed out that a death certificate could be given by any relative or friend of the deceased, practically by any one at all. It was essential that these certificates should only be signed by properly qualified medical men, and that the matter of deciding whether the qualifications of the signer were satisfactory and the certificate

properly made out as regards nosology, should be left to competent persons, instead of, as at present, to superintendents of cemeteries, whose education hardly fitted them for these important duties.

Upon motion of Dr. F. W. Campbell, it was resolved to refer the matter to the council of the Society, and such other persons as the council might select, with power to give Dr. Laberge such advice and assistance as seemed necessary.

Stated Meeting, December 1st, 1893.

James Bell, M.D., President, in the Chair.

Insular Sclerosis—Dr. James Stewart exhibited a boy and a girl, the subjects of insular sclerosis.

Discussion—Dr. Smith asked if there was any family history of syphilis, which might explain both the sclerosis and optic atrophy.

Dr. Bell asked if the disease usually occurred in families.

Dr. Stewart, in reply, said there was no history of syphilis obtainable. Syphilis, as far as we know, has no connection with insular sclerosis. White atrophy of the optic nerve is simply a wasting of the axis cylinder and not like atrophy following inflammation. Only two instances are recorded where two brothers were affected with insular sclerosis.

Ureter vs. Appendix—Dr. Smith exhibited the patient from whom he had removed last spring what was thought at the time to be the ureter, but which proved to be the appendix vermiformis. The patient was in perfect health, whatever had or had not been removed.

Reform in Coroner Law—Dr. Girdwood presented the report of the special committee appointed to consider this subject. The committee considered that the present moment was not an opportune one for bringing the matter before the notice of the Provincial Government.

After some discussion it was decided that the committee be requested to prepare a report and present it at the following meeting of the Society.

Fibro-Cystic Tumour of the Uterus—Dr. Smith exhibited the

specimen. In October, 1893, amputation had been done at the level of the internal os. There had been a local peritonitis some months ago. The operation presented no difficulties. The abdomen was not flushed out after operation, contrary to his usual practice. Two days after the operation acute septicæmia developed and the patient died the following day. An autopsy showed great distention of the stomach and intestines and Dr. Smith himself subsequently had a severe septic inflammation beginning in the hair follicles of the back of the hand, although no abrasion could be seen. The lesson of the case was always to flush out the abdomen after operation.

Dr. SHEPHERD said that few surgeons flush out the abdomen now-a-days, and he did not himself consider it necessary.

Rupture of the Kidney—Dr. WYATT JOHNSTON showed two specimens of ruptured kidney. One was in a case where an old woman was found dead. There were a few bruises about the head and arms, but no serious external signs of violence. A verdict of manslaughter had been rendered, but the grand jury found a No Bill. It was supposed that the injury was due to the deceased having been maltreated by her son. In the second case the rupture was caused by a beam falling access the loins of the deceased. A diagnosis of ruptured kidney was made during life by Dr. Sutherland, as an area of dulness extended to the umbilicus from the right flank and the urine contained blood. In this case the injured organ was very large, the other kidney being so small that it was not discovered at the autopsy, although the ureter could be traced for some inches from the bladder.

Operation for Gall Stones—Dr. SHEPHERD showed a phial containing over 500 gall stones, which he had removed three days before from a woman aged 50. She had suffered for many years and recently had shown signs of peritonitis. An exploratory incision showed a tense gall bladder, which on puncture contained some pus and was packed with gall stones, which were removed with a dinner spoon, after protecting the surrounding tissues by packing them with sponges. As the gall bladder could not be brought to the opening, the omentum was stitched to it so as to form a channel for the bile, of which much was passed.

Case of Epilepsy—Dr. E. P. WILLIAMS read a report of this

case which occurred in a young man 21 years of age. Father and mother gouty, brothers and sisters healthy. When 2 years old had a convulsive seizure followed by transient left hemiplegia Following this, slight convulsive seizures occurred about once a week, preceded and followed by mental dulness. At 8 years he was for a number of days unable to eat or swallow. At 10 years the attacks were preceded by a feeling of epigastric fulness and he would fall down At 18 years the frequency of the fits increased to one or two every third or fourth day. Grasping his wrists would sometimes stop an attack. Nitrite of amyl or ammonia inhalations sometimes had the same result. Bromide treatment was continued from the 10th to the 21st year. In Feb. 1893, he had a moderately severe attack of typhoid, during which and until March 15, one week after the fever subsided no fits occurred. (No bromide was taken during the fever.) During convalescence he had mild fits at first frequent, afterwards at long intervals, until August, when the fits reappeared at first severe and infrequent, afterwards milder and at the rate of 20 per month. The general health and mental condition remain good.

Discussion—Dr. MILLS said that the so-called motor area would soon be regarded as a reflex or sensori-motor area. The fact that the fits could be arrested by seizing the wrist was in favour of this view.

Dr. F. W. CAMPBELL said opinions varied as to what constituted large doses of bromide. He knew a man who had been taking drachm doses three times daily for 25 years with benefit. He thought nitro-glycerine might be of service.

Dr. WILLIAMS, in reply, said that nitro-glycerine had been tried for some years in this case, but had no apparent effect.

College of Physicians and Surgeons, Quebec—Dr. J. H. R. ALLAN complained that it was impossible to get a statement of account or a receipt from the college, and that about a year ago the accounts had been sent out in an offensive manner upon post cards.

Dr. F. W. CAMPBELL thought that the irregularities were due to the action of the former secretary.

Stated Meeting, December 15th, 1893.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Dr. A. G. A. Ricard, was elected an ordinary member of the society.

Tabes without absence of Knee-jerk.—Dr. Finley exhibited a man who had suffered for some years from attacks of vomiting, with extreme pain in epigastrium. He also had severe pains in lower extremities usually alternating from one side to the other, and pains over forehead and trunk, described as "just like lightning." There was diminution of sexual power. No ataxia, but slight muscular weakness. The knee reflexes were exaggerated on both sides. The pupils are slightly uneven and showed Argyle Robertson reaction. There was no mental disturbance.

DR. JAS. BELL thought that the cord area involved could not be that usually affected. Was it right to speak of the disease as ataxia where none existed. A patient who came to him recently, under the impression that he was suffering from stone in the bladder, presented all the symptoms of tabes.

DR. FINLEY in reply said the disease was probably in the pre-ataxic stage. The Argyle Robertson pupils and lightning pains made it difficult to arrive at any other diagnosis. There was no history of syphilis obtainable.

Congenital Polypoid growth of Conjunctiva.—DRS. BULLER AND ADAMI. The specimen was taken from the occular conjunctiva of the left eyeball in a child 3 months old, and had existed since birth. These growths occur either as low white circular swellings invading the corneal margin or as an irregular mass, springing from the sclerotic between the cornea and the outer canthus. The present growth apparently was of the latter, or scleral, variety. Its attachment to the eyeball was by means of a thick expansion extending slightly into the cornea. The growth was removed with as little disturbance as possible of the surrounding tissue. When the patient was removed a few days later the eye had a satisfactory appearance. The specimen showed under the microscope a well formed epithelium, with corium and subcutaneous tissue. This tissue was loose in the centre and showed a cystic space. The epithelium showed spiral and coiled glands, resembling

sweat glands rather than those of conjunctiva. The subcutaneous tissue showed well formed vessels, with fibrous tissue and what appeared to be degenerated muscle fibres. It corresponded therefore rather with the tissues of the outer surface of the eyelid than the conjunctiva, but was of too simple a nature to be classed as a true dermoid.

Discussion.—Dr. Proudfoot said tumours of this kind were commonly attached to the margin of the cornea. Recently in a case treated for some time by the family physician for conjunctivitis he had found a polypus lying beneath the eyelid. Polypi sometimes followed injury or operation of the conjunctiva.

Small pedunculated polyp from the left tonsil.—Drs. Birkett and Adami. The tumour was taken from a child 4 months old, and was exhibited owing to the rarity of tonsillar tumours. It was about the size of a pea, and consisted microscopically of a superficial layer of flattened epithelium with subepithelial connective tissue, beneath which were a series of glandular alveoli, separated by fibrous septa. The gland tissue is that of typical mucous glands and shows no adenomatous over-growth. No excretory ducts were made out. This class of tumour had been frequently described in the soft palate. Growths of the tonsil of any kind were rare, lymphoid, fibrous, myomatous, myxomatous or fatty being the usual forms. Epithelioma was more frequent than sarcoma. The present growth was benign.

Mixed Carcinoma and Sarcoma of the Peritoneum.—Dr. Adami showed the specimen from a man who died of peritonitis. At the autopsy an enormously enlarged omentum was found. The mesentery was also involved, but the intestinal tube seemed unaffected except that the coils were matted from inflammation. The diaphragm was thickened and infiltrated with new growth, which had extended to the pleural surface and set up a severe pleurisy. The pleural cavities contained 9 pints of yellow fluid. Pericardium and lungs free. Death was apparently due to pressure on the heart. Microscopical examination showed the growth to be sarcomatous for the most part, but in places there were definite fibrous alveoli, containing solid masses of epithelial cells, in other words typical scirrhus cancer. There was therefore a combination

of cancer and sarcoma. The man was not emaciated, and had almost no disturbance of health up to the time of the acute peritonitis and pleurisy, which caused his death.

Dr. Jas. Bell, gave the following history of the case:—On Oct. 12th, 1893, the man was suddenly taken at night with severe abdominal pain. One week later he was admitted to the General Hospital and a diagnosis of acute peritonitis made. Some evidence of an abdominal growth caused his transfer to the surgical ward, where an explanatory abdominal incision was made, but, as the case was unsuitable for operation, the wound was closed. The patient died next day. Dr. Bell thought the sarcomatous looking tissue referred to might possibly be an early embryonic stage of the fibrous tissue of the cancer's stroma.

Dr. Adami, in reply said, that conditions of carcinoma sarcomatodes were described by pathologists, when the stroma was sarcomatous and the alveolar contents epithelial. In the present case there was no primary growth in any organ where epithelium would normally exist.

Dr. Finley, said there was a history of a small growth having been thrice removed from the inside of the nose in the present case.

Dr. Jas. Bell said that this point had been investigated in hospital, but it appeared that the nose was only touched with caustic.

Double Hydro-nephrosis.—Dr. C. F. Martin, exhibited the kidneys and bladder of a man who entered hospital with symptoms of chronic renal disease, and died two months later with uraemic coma. There was moderate double hydro-nephrosis and dilatation of the ureters. The cause of the hydro-nephrosis appeared to be a mass of inflammatory fibrous tissue external to the bladder, in the region of the trigone, near the point of entrance of the ureters. This was most marked on the left side. There were also numerous constrictions in the course of the ureters. The left testicle had been removed and there was a large sinus in the left ischio-rectal fossa.

Dr. Adami said that the statistics of hydro-nephrosis, showed that many cases were recorded when the cause was not explained. Had the dissection made by Dr. Martin in this

case been more frequently practised perhaps there would not be so many mysterious cases on record.

Oxalate of Lime Calculi from the Kidneys.—Dr. Jas. Bell, showed some large stellate prickly crystals, apparently oxalate of lime, removed from a cyst in the kidney of a patient who had no renal symptoms whatever.

Semi-lunar Cartilage.—Dr. Jas. Bell also exhibited a portion of an inner semi-lunar cartilage removed from the knee of a man, who had sprained his knee when jumping from a carriage. The joint was locked for a time, but afterwards became normal, until a severe exertion once more displaced the cartilage, and the joint was replaced with difficulty. A few days later, while demonstrating how the accident occurred, the joint again became fixed and could not be reduced. The cartilage was therefore removed. It was evident at the operation that it would be impossible to keep the joint in place. Cases have been recorded where the joints have been permanently and satisfactorily reduced after being out for some years.

Enucleation of Thyroid Tumour.—Dr Jas. Bell showed a small fibro-cystic tumour removed from the thyroid and emphasized the advantages of enucleation as contrasted with extirpation of the thyroid.

Reform of the Coroner Law.—Dr. Adami read the report of the committee upon this subject. (See Appendix A.)

Dr. Bell thought the committee had acted wisely in not undertaking to pronounce upon the legal side of the question. Upon motion of Dr. Girdwood it was unanimously resolved that the report be adopted and that copies be sent to the Attorney General, and the medical members of the Legislative Assembly and Council at Quebec.

Blood supply of vermiform appendix.—Dr. Bell showed for Dr. Shepherd a preparation showing that the arterial supply of the appendix was due to a single artery which did not anastomose with any neighbouring vessel, which explains the readiness with which sloughing is produced in the appendix when the circulation is interfered with.

Stated Meeting, December 29th, 1893.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Drs. S. F. Wilson and G. H. Raymond were elected members of the Society.

Death Certification.—The Secretary, stated that in reply to Dr. Laberge's inquiry regarding the amendment of the city charter in the matter of death certification, the following resolution, framed by the council and adopted unanimously by the society, had been communicated to Dr. Laberge, medical health officer for Montreal:—

Resolved—1. That clause 17, title 15 of the charter of the city of Montreal be so amended that all certificates of death must be given by the attending physician, the city health officer, or the coroner's physician;

2. That all such certificates of death be registered with the city health officer, at the City Hall, within twenty-four hours of the death of the person;

3. That no body be buried or received for burial by the superintendents of cemeteries without a permit from the city health officer;

4. That such penalties be enforced as to insure the carrying out of this law.

Specimens of diseased Uterine Appendages.—DR. MARTIN exhibited the following specimens for Drs. Alloway and Adami:

Ovarian Tumour Simulating a Parovarian Cyst.—K. D., aged 30, married, was operated on by Dr. Alloway at the Montreal General Hospital on August 16th, 1893, for the removal of a thin walled cyst, situated in the left broad ligament, and apparently monolocular. The tumour was removed, together with the left ovary and broad ligament. The appendages on the right side being found diseased, were also removed and ventrofixation performed. Recovery was good. Examination of the specimens by Dr. Adami showed that the tumour, though apparently monolocular, really contained several small accessory cysts. The left ovary was enlarged and the ovarian tissue was directly continuous with that of the main cyst, which was, therefore, evidently ovarian in origin. The right

ovary was enlarged and showed numerous dilated graafian follicles forming small cysts, all situated near the surface, and containing in most cases grumous blood-stained fluid. Both tubes were thickened, the right being dilated and containing inspissated purulent fluid. The case was of interest as showing a general tendency to cystic formation of the ovaries.

Hæmatoma of Left Fallopian Tube.—W. E., aged 34, married, had borne five children, and during the last eighteen months had aborted five times. Since the last abortion there had been a continuous bloody discharge from the vagina. The patient was extremely anæmic, and was too weak to walk. When examined, in the Montreal General Hospital, there was severe pain in the hypogastric and inguinal regions. A soft movable mass, the size of a fœtal head at the 6th month, was felt behind the uterus and to the left. The uterus was anteverted. On September 6th, 1893, the abdomen was opened in the middle line and a small elastic tumour attached to the left broad ligament found, which proved to be full of blood and clot. The left tube and ovary were ligated and removed with the tumour. Recovery was good. On examination by Dr. Adami, the tumour proved to be a hæmatoma of the fallopian tube. The external surface of the sac was roughened, inflamed and covered with organized lymph. The inner surface of the sac and contents were carefully examined for fœtal or placental structures, but with negative results. The hæmatoma was evidently of chronic growth and appeared to have developed as a consequence of chronic inflammation and ulceration of the tube.

Dr. Alloway, commenting on the cases, said: It was interesting to know that a cyst of the ovary could become so completely separated from that organ and so simulate a par-ovarian cyst. In the case of hæmatoma the tube was distended to the size of his wrist and was ruptured in removal. It so resembled a tubal pregnancy that he was surprised to find no evidence of a fœtus, but now believed the bleeding due simply to rupture of the blood vessels during tubal inflammation. There was a history of miscarriage six weeks before the operation.

Double Pyosalpynx with Intestinal Fistula.—Dr. Alloway also related a case where the appendages were removed from a woman suffering from severe vaginitis and pelvic peritonitis.

Blood and pus had passed by the bowel. Both tubes were greatly dilated, the left being fully two inches in diameter and filled with pus which escaped into the peritoneum during the operation. The pus was not fœtid and no bad results followed this accident. The right tube was thickened into a dense rigid cord, passing round the coils of intestine. Both tubes were extensively adherent to the intestine and the entire pelvic contents matted together. Between the fimbriated extremity of the right tube and the bowel was a fistulous opening of the diameter of a five cent piece, which was closed by the Lembert-Czerny method. Another opening was discovered in the bowel where the knuckle of the tube had become adherent. The uterus and omentum were utilized in closing this. The extensive hæmorrhage was arrested by pressure. The pelvis was not washed out. There was no rise of temperature for the first week, when there was a slight rise lasting for some days, and accompanied by tympanites. At the present date, nine weeks after operation, she appeared on the road of recovery. Nothing more than a local peritonitis appeared to have followed the operation, although some fæcal matter must have escaped into the peritoneal cavity. A glass, and later a rubber drainage tube was used. At first some pus, but no fæces passed through these. Starvation diet, with rectal injection to relieve tympanites were employed. Pyoctanin and peroxide of hydrogen were used as antiseptics.

Discussion.—In answer to Dr. Gordon Campbell: There was no evidence of fæces passed per vaginam. To Dr. Armstrong: The omentum was simply brought down, not sutured.

Cholecystotomy.—Dr. Armstrong exhibited a large solitary gall stone removed in September, 1893, from a woman aged 42. Ten years ago she had her first attack of severe pain, with jaundice, in Harrogate Hospital, England, when an operation was suggested but declined. Since then she had attacks of biliary colic with jaundice about every six months until the last two years, since when they occurred monthly, lasting two weeks at a time. Pain, severe in hypogastrium and right hypochondrium, requiring morphia. The gall bladder contained some pus, its walls were strong and readily sutured, and it was long enough to reach the abdominal wall. On palpation no stone could be felt in the common or cystic ducts. Recovery

uneventful, the only unfavourable point being the persistence of the sinus, although there was satisfactory evidence of sufficient bile in the stools. If the loss of bile proved injurious to health the only operation feasible would be that of establishing a communication between the gall bladder and the small intestine, as has been done in one case by McBurney.

In answer to Dr. Lafleur: She had no febrile attack while in hospital, but said herself that some of the previous attacks made her feverish.

Dr. F. W. Campbell wondered at the excessive pain in this case. Pain usually arose from small stones passing along the duct, and in his opinion comparatively small stones gave him the most pain. It was comforting to think that if serious symptoms of obstruction arose, surgeons could now afford permanent relief by operation.

Dr. Lockhart recalled an operation he had witnessed on a woman of about 50, when only two stones were found, one of which had two facets, having possibly been turned end for end. The other stone had three facets.

Dr. Jas. Bell thought the contraction of the gall bladder upon a large stone would easily account for the pain. With renal calculi very large stones often caused no pain, while intense agony was produced by very small ones. In one case a large gall stone was passed by the bowel which must have ulcerated through from the gall bladder.

Dr. Armstrong asked if Dr. Campbell's first attack was more painful than subsequent ones.

Dr. Campbell replied that such was not the case. He thought the pain, as a rule, was only produced when the stones entered the ducts.

Cases of Infection in Pneumonia.—Dr. Gordon Campbell communicated the following three cases of infective pneumonia in a family:

My object in presenting this report to the Society is not because there is anything of special interest in the three cases of pneumonia in themselves, but from the apparent dependance of two upon the third for their origin.

Briefly, the history of the three is as follows:—

Case I.—On Sunday, November 19th, Mrs. D., aged 30,

was seized with a severe rigor followed by high fever and sharp pains in the right side. I saw her on the 22nd, two days after the onset, and made out the usual signs of pneumonic consolidation of the base of the right lung, and over the dull area well marked pleuritic friction sounds. Temperature 104°, P. 130, R. 36, and a small amount of rusty expectoration. The pyrexia lasted ten days, falling to normal in the course of 48 hours, the termination being accompanied by a profuse diarrhœa. The whole lung ultimately became involved in the pneumonic process, and the resolution is not yet complete 4 weeks after the fall of the temperature.

Case II.—Solomon D., the six year old son of No. 1, was seized with a slight chill on the afternoon of Dec. 21st, just 48 hours after his mother. I saw him the following day and found the early physical signs of pneumonia in the left base. Temp. 103.8°, P. 150, R. 40. Here also in two days the whole lung was involved, but the general condition remained good throughout, although the respirations for 24 hours were 64 per minute. The fever lasted 7 days, coming down to normal the morning of the 29th. Resolution was prompt and complete.

Case III.—Charley D., aged 4, a brother of the last, was seized with the early symptoms on the evening of the 24th, 5 days after his mother and 3 after his brother. This boy had been under my care with bronchitis from the 4th to the 9th of the same month (November). On making my first visit to the above two cases on the 22nd, he was crying with pain in the head and neck, and I examined his chest and found evidence of a general bronchitis, with a temp. of 100°, R. 28 ; the two following days he was improved, but, as before mentioned, on the evening of the 24th he became rapidly worse, and by the 26th I made out all the usual physical signs of lobar pneumonia, extending from the base of the right lung to an inch above the nipple in front. The fever here was not so high as in the other two cases and fell to normal on the fifth day, remaining down one week, then an evening rise was noticed, and he developed an empyæma, which has been treated in the surgical wards of the General Hospital.

In the first case the cause was considered to be a very rapid fall in temperature, accompanied by a very high wind, to which the patient had been exposed while insufficiently clad. The second case occurred two days later, and he had been in good health up to the time of the onset and consequently exposed to the same aërial conditions as his mother. It is to the third case, however, that the most interest attaches, for he had not been outside the house door for three weeks previously, and on my first visit I had examined his lungs and found nothing but a rekindling of the general bronchitis, for which I had already been treating him, and it was not until two days later that the pneumonia developed. The whole family sleep in the one room, the youngest boy in the same bed with his mother, and consequently there was every facility for infection, provided such is possible, and I think in this particular instance we are forced to the conclusion that Case No. III was contracted from the other two, and in all probability No. II. from No I.

That pneumonia is due to a specific micro-organism is now generally admitted, but cases which can be definitely shown to depend directly upon others are not numerous enough to allow one to neglect putting them on record.

Dr. F. W. Campbell stated that when the theory of the infective nature of pneumonia was first brought out 10 years ago he found that he and the late Dr. Howard were treating between them seven cases where the disease appeared to have been transmitted by direct infection.

Dr. Morrow had recently had a fatal case of pneumonia in an old man, who was being nursed by his sister. At his second visit the sister was noticed to be breathing fast. She became very ill and died suddenly a few hours later.

Dr. Jas. Bell had reported a case to this Society ten years ago. A hospital orderly lived in a small upper tenement on Mignonne street, with his wife and wife's brother. The latter came home one day with a very severe pneumonia. Two or three days later the orderly was stricken with pneumonia and within a few days the wife also took sick with the same disease. The two men died and the women recovered.

Dr. Gordon Campbell said that what specially interested

him was the fact that the youngest child was in the house all the time for three weeks before taking ill, and was, therefore, not exposed to the same condition as the mother.

Danger of Hypodermic Injection of Morphia.—Dr. F. W. Campbell related the case of an old lady, his own patient, subject to attacks of pleurodynia, for which he was in the habit of prescribing minute doses of opium. In his absence she was seized with severe pain, and a neighbouring practitioner who was called in gave her a hypodermic of morphia. She went to sleep so profoundly that her friends were alarmed. Next day she was found to be suffering from complete paralysis of the bronchial tubes, and the phlegm went on accumulating until she died shortly afterwards. The relief of pain was not the only object to be considered when suddenly called to see a case. A hypodermic needle may be a two-edged sword, especially when used on the aged.

Dr. W. F. Hamilton asked whether the patient was suffering from the old attack of pleurodynia or from pneumonia? How much opium was used in the hypodermic injection? and what cause was assigned in the death certificate?

Dr. Campbell did not remember what cause was stated in the death certificate, but thought it had been certified as grippe. She was not suffering from pneumonia the day previous. He did not know the quantity of opium. The patient largely regained consciousness before she died.

Stated Meeting, January 12th, 1894.

James Bell, M.D., President, in the Chair.

Transient Swelling of the Right Arm.—Dr. James Bell showed the patient, a woman 22 years old, who suffered constantly from a painless swelling of the right arm, extending from just above the elbow to the finger tips, accompanied by slight muscular stiffness of the forearm. There was nothing abnormal in the circulation or innervation of the part. The swelling was first noticed six months ago and diminished when the arm was kept at rest for a few days, but came on again when she began to use it. An exploratory incision on middle third of outer border of the radius made two months

ago, revealed nothing unusual. He was unable to make a diagnosis.

Dr. Armstrong had seen the case and was unable to throw any light on its causation.

Dr. Shepherd thought the condition hysterical and due to mechanical obstruction, surreptitiously produced, to the venous circulation.

Dr. Wesley Mills thought Dr. Shepherd's explanation possible, and had noticed in talking with the patient that she was very ready to adopt and repeat symptoms suggested to her. Engorgment of the capillaries could, however, also be produced through nervous influence. In nervous persons, according to Dr. West, transient tumours sometimes suddenly appear in the region of the axillary artery. The present case might possibly be of nervous origin.

Dr. Gurd had treated the patient for some time on iron without benefit.

Dr. James Bell thought the obstruction must be mechanical, whether produced voluntarily or by something along the course of the veins.

Ruptured Tubal Pregnancy and Appendicitis—Dr. Armstrong exhibited a ruptured fallopian tube with ovary attached. Lying at the bottom of a sort of sac, at the point of rupture was a small object which appeared to be the fœtus. (See pathological report at the next meeting.) The patient, a married woman aged 34, was the mother of seven children. In August, 1893, she had what appeared to be a mild attack of appendicitis. She made a good recovery after ten days in bed and remained well till Nov. 28th, 1893, when she was suddenly seized with severe abdominal pain and slight diarrhœa, and when seen one hour later was in an extreme condition of shock. On removal to hospital her condition was so much improved that the contemplated operation was not performed, and she was able to return home in ten days. On Jan. 5th, 1894, she was suddenly seized with intense abdominal pain, vomiting and slight diarrhœa followed by collapse, and was operated on to-day (Jan. 12th.) Ruptured tubal pregnancy was suspected in spite of the history of appendicitis in August. The abdomen was found, on opening, to be full of blood. The right tube, which was surrounded by clots and debris, was at

once ligated and removed. On Dr. Bell's suggestion the appendix was removed and examined. It was enlarged and, on opening, a blood clot was found in its centre. The diagnosis was made specially obscure by the fact that the menstruation had not been disturbed, except for a week after the commencement of the October period. The flow was then resumed and went on to its normal term of 4 or 5 days. Although the pathology of ruptured tubal pregnancy has been known since 1814, it is only 11 years since Tait performed his first operation; since which time he has operated on 33, saving all but one, his first case. This fatal result Tait attributed to his neglecting to tie the bleeding tube before cleaning out the abdomen. Intra-peritoneal hæmatocele is specially dangerous as the blood does not clot, but goes on escaping unless relieved by the surgeon. Extra-peritoneal cases were much less dangerous. Dr. Armstrong thought the abdomen should be opened in every case of collapse following severe abdominal pain.

Dr. Gurd referred to a case of his where Dr. Gardner had operated. The pain was intense. The clot resembled black current jelly. The case recovered.

Dr. England mentioned a case seen with Dr. Armstrong, when the presence of blood in the abdomen had been diagnosed from the dull note in the dependant part of the abdomen. The perforation was situated near the uterus. Recovery was good.

Dr. Lafleur had seen a case at the Johns Hopkins Hospital where the presence of blood was revealed by aspiration. Upon operation, the case proved to be a ruptured tubal pregnancy complicated with chronic ulcerative appendicitis.

Dr. Gordon Campbell had seen Dr. Armstrong's case one hour and a half after the commencement of the first attack. The pain was pretty high up, a little to the right of the umbilicus. There was no dulness or tumour.

Dr. Wesley Mills—Intra-venous injection appears to be indicated when collapse is severe.

Dr. Armstrong, in reply, said that in his experience dulness and tumour were only met with in extra-peritoneal cases; when the primary rupture is intra-peritoneal the blood is diffused between the coils of intestine.

Intra-Capsular Fracture of the Femur in a Paralysed Limb.—

Dr. Jas. Bell exhibited the specimen and related the history of a man 68 years old, who had been the subject of infantile paralysis. The fracture occurred in the paralysed limb. After eight weeks' treatment by extension with the long splint he was about to be discharged, as there was no hope of restoration of function in the originally useless limb. He contracted a pneumonia and died nine weeks after the accident. The bone did not show the slightest attempt at repair. In a normal state of nutrition considerable attempt at union would be expected after nine weeks immobilization. Absence of union in this case was doubtless due to the paralysis. Dr. Bell thought that even in very old patients sufficient union to insure a serviceable limb is to be hoped for, and disapproved of the advice given in text books to make no attempt at treatment if very old. In one case of his a lady, aged 94, recovered sufficiently to walk about after nine or ten months.

Dr. Armstrong referred to a case in his practice when a lady 92 years old got sufficiently well to walk about, though no treatment at all was attempted. He asked if Dr. Bell had ever seen bony union in these cases.

Dr. Shepherd thought that the cases which got well were those where impaction was present. It is in cases where manipulation for purposes of diagnosis is employed that the patients never get well, as the impaction is thus broken up. Manipulation should never be used in such cases.

Dr. W. F. Hamilton had been present at the autopsy on Dr. Bell's case. There was a purulent arthritis of the joint.

Dr. Bell fully agreed with Dr. Shepherd's remarks. He had not seen any specimens of bony union in old persons.

Dr. McGannon did not see how a diagnosis could be made without manipulation. He had resorted to it in the case of a woman of 58, and after treatment of a plaster of Paris bandage had secured good union.

Dr. Gordon Campbell referred to Treves sign of a lax condition of the fascia lata on the affected side, as being of great value in the diagnosis of intra-capsular fracture.

Dr. Shepherd thought that a diagnosis could be made by observing the relation of the trochanter to Nelaton's or Bryant's test lines. He would rather make an error in diagnosis than run the risk of crippling the patient for life.

Copper Nugget in the Form of a Skull-Cap.—Dr. Jas. Guerin showed this specimen, found in the Calumet mines, 4,200 feet below the surface. It was stated that near it were found two other pieces of copper, one having the outline of a foot, the other that of a tibia, according to the description of a medical man. The resemblance to a skull was very striking, but if it was a skull how did it get there, and why was it converted into copper?

Dr. Girdwood thought the specimen merely a piece of copper ore.

Case of Belladonna Poisoning.—Dr. Elder was summoned on Dec. 23, 1893, to see a woman aged 45, who was stated to have suddenly fallen in a fainting fit while at breakfast. She was lying down. The face was suffused. There was intense throbbing of the vessels of the neck. The pupils were so dilated that scarcely any iris could be seen. Belladonna poisoning was at once suspected, especially as a liniment of equal parts of extract belladonna and glycerine was being prescribed for another member of the family. It transpired that by mistake a dessert spoonful of this had been taken. A few moments later she said that her eyes "felt as if dropping out." She soon became unconscious. Her stomach, which was nearly empty, was thoroughly evacuated with the stomach pump and washed out with four quarts of water. Afterwards half a grain of morphia was given hypodermically, which promptly contracted the pupils. The pulse was at first 160 and breathing rapid, afterwards the pulse became slower but weaker, and breathing deeper and stertorous. Hypodermics of brandy and ether were employed as stimulants. At times respiration almost stopped, but would revive upon pressing the epigastrium. At 3 p.m. at suggestion of Dr. Blackader, $\frac{1}{30}$ gr. nitrate of strychnine was given. At 6 p.m. she had recovered consciousness and was able to pass her urine. After this her recovery was rapid. On the following day, while breathing near her husband's eyes, he declared that he suddenly became blind. His pupils were certainly dilated, possibly from absorption of the drug exhaled by the patient's lungs. One of the hypodermic punctures produced a slough.

Dr. Blackader thought the recovery due to the prompt treatment and the nature of the mixture. The presence of so

much glycerine would delay absorption. There was not an exact antagonism between opium and belladonna, and the use of either as an antidote for the other should be made very cautiously for fear of an overdose, as both opium and belladonna in large doses acted as cardiac and respiratory depressants. Dr. Wood thinks that the consecutive use of several drugs having the same action is preferable to a single physiological antidote. He did not advise the use of pilocarpine in the present case, as it would not stimulate the respiratory centre. We have no drug which will exactly cover the symptoms of another drug.

Dr. DeCow mentioned a case of poisoning by cedar oil, where the symptoms were weak pulse, unconsciousness, rigidity of the muscles of the jaw, and epileptiform convulsions. The stomach was emptied and hypodermics of ether and brandy given. One case of this form of poisoning has been recorded.

Dr. F. W. Hamilton related a case of bleladonna poisoning when a dose of belladonna liniment was given by a nurse. An emetic of mustard produced prompt emesis. Two hours later the only symptoms remaining were slight dilatation of the pupils and dryness of the throat.

Dr. Proudfoot referred to a case of belladonna poisoning from application of atropine to the conjunctiva. Personally he once by mistake took an overdose of a belladonna and bromide mixture while suffering from whooping cough. Blindness, giddiness and faintness came on, but passed off in three hours without treatment.

Dr. Girdwood asked Dr. Elder if there was suppression of urine.

Dr. Wesley Mills reported some mild cases of atropine poisoning which had recovered without treatment. In one chronic case polyuria was noticed. In the dog's heart atropine prevents vagus inhibition and pilocarpine restores that function. Further experiments upon the antagonism of the two drugs were needed.

Dr. Gordon Campbell had seen a case of poisoning in a child from application of atropine to the conjunctiva.

Dr. Elder, in reply—The quantity of urine was not measured. There was no suppression. The symptoms may have been modified by the morphine given. There was no rash on

the skin and no delusions. Until the physiological action of atropine was experimentally worked out, the treatment of such cases must remain experimental.

Stated Meeting, January 26th, 1894.

Dr. James Bell, President, in the Chair.

Suture of Tendons of the Hand.—Dr. Bell exhibited a man on whom he had operated four weeks previously. The patient had fallen through a plate glass window and cut the tissues of the palm and wrist severely, the superficial and deep flexor tendons as well as the ulnar vessels and nerves being severed. Owing to an interruption, the divided ulnar nerve was overlooked at the time. The wound was therefore re-opened next day and the nerve sutured, perfect sensation in the fifth and inner side of the ring finger being obtained. Sufficient movement was now present in the hand to show that the action of the tendons was fully established. In repairing the injury, the superficial and deep tendons had been sutured separately, but Dr. Bell believed the result would have been just as good had the cut ends simply been united *en masse*.

Factitious Urticaria.—Dr. Gordon Campbell showed a man in whom he had detected this condition accidentally while examining the chest. The slightest scatch brought out distinctly raised reddish wheals within less than five minutes. This was demonstrated before the Society. The condition was most marked in the skin of the back, but was also present over the chest, abdomen and limbs. Dr. Campbell stated that the rareness of this condition was probably largely owing to the fact that, as in the present case, the patients were not inconvenienced by it, and therefore not aware that they suffered from it, and it was only discovered by accident.

Dr. Foley considered the disease one of the commonest skin affections.

Dr. Orr asked if the patient had shown evidences of being subject to the ordinary mettle rush.

Dr. Campbell replied that the man was not aware that he ever had any skin disease at all.

Induction Coil for Utilizing the Ordinary Electric Light Cur-

rent for the Thermo-Cautery.—Dr. Lapthorn Smith exhibited an apparatus invented by Mr. Shaw and manufactured by the Montreal Electric Company. The instrument can be connected with the socket of any incandescent lamp by simply screwing in a plug. The current can be regulated with ease and arranged so as to heat the platinum knives or loops to any degree required. There was no possibility of dangerous electric shock being given. The apparatus was very cheap, costing only $20 00, the current costing 1½ cents per hour. The apparatus had been employed with satisfactory results for the last two years by several Montreal physicians, but not being aware of this Dr. Smith had nearly invested in a much more expensive apparatus made in New York, and so wished to save other members incurring a useless expense.

The Curative Effects of Exploratory Laparotomy.—Dr. Shepherd read a paper upon this subject.

It has been known for years that in certain cases the mere performance of abdominal incision has some remarkable effects on growths and other conditions of the abdomen. This has been widely recognized especially in cases of tuberculosis of the peritoneum. In 1889, Mr. Lawson Tait (*Edinburgh Medical Jour.*), drew attention to the fact that certain diseases of the abdomen seem to yield to surgical treatment applied to them by accident, and that he had more than once seen tumours, often of large size, disappear after a mere exploratory incision. These cases he reported at the time, but his statements were not believed. The cases in which he had seen tumours disappear in this way were chiefly in connection with the liver, spleen and head of the pancreas. From the number of cases of this kind observed by him, Mr. Tait is satisfied that the disappearance is not a mere coincidence, but that the opening of the peritoneal cavity has a direct influence in setting up the process of absorption of the tumour. Every one knows that after the smallest wound of the peritoneum, an intense thirst is set up which lasts for some days, and that this thirst is not set up after opening any other serous cavity, or in wounds of the abdomen where there is no injury of the peritoneum. Mr. Tait relates a number of remarkable cases in this paper. One case parti-

cularly deserves mention. A lady, æt. 54, had an abdominal section performed for supposed gall stones or possibly cancer of the liver. The liver was found covered with large hard nodules, one of which closely imitated the lump which had led to the diagnosis of distended gall bladder. The case had so much the appearance of malignant disease, that no hopes were given of her recovery. Contrary to expectation, however, the patient completely recovered, and was alive and well several years after. A number of other cases are also given. In no less than three out of four cases of greatly enlarged spleen, the tumour disappeared without more being done than opening the abdomen and examining the growth, and in one case of tumour of head of pancreas, with great emaciation, exploratory incision resulted in entire disappearance of the tumour in five or six weeks, and complete restoration to former health. In the case of supposed cancerous nodules of the liver, the evidence would have been much stronger had Mr. Tait excised a portion for microscopic examination. It is hard to believe that there was malignancy in any of the cases, but the fact remains that the gross clinical appearances were those of malignancy, and that the observers were skilled in recognizing the normal appearance of the organs. It is possible that some of the lesions may have been due to syphilis. In 1891, Dr. J. White, of Philadelphia, published in the *Annals of Surgery* an interesting and exhaus tive paper on the "Curative Effects of Operation *per se*," and came to the conclusion that epilepsy, certain abdominal tumours, peritoneal effusions, and also tubercle were benefited by these operations, and thought one of the possible factors was anæsthesia, also psychical influence, relief of tension and reflex action may enter into the therapeutics of these cases. He does not think accident or coincidence explains them.

Pierre Delbet (*Bull. de la Societé Alchemique de Paris*, Oct and Nov., 1892) reports the case of a child, æt. 2½ years, whose health had been failing for some months. On examination a large smooth, firm tumour was found on the right side of the abdomen, extending from the costal cartilages to the iliac fossa. The diagnosis of sarcoma or carcinoma of liver was

made. An exploratory operation was performed, and the tumour was found to be an enlarged right lobe of the liver, pale in colour, with violaceous marblings. Enlarged glands were found in the hepatic omentum. Punctures were made but revealed nothing. The result was immediate and surprising; in three days the child regained appetite and cheerfulness, the liver rapidly decreased in size and returned to normal in two months. The character of the enlarged liver was revealed later, when syphilitic gummata appeared on forehead and scalp.

Dr. Wm. White, in the elaborate article in the *Annals of Surgery*, referred to above, cites many cases where exploratory abdominal incision relieved symptoms of pain, vomiting, &c., and also some cases of tumour, which shrank away after operation, although at the time the operator considered them malignant and gave a hopeless prognosis.

Prof. Von Mosetig, of Vienna, in 1888, showed a case where he had performed exploratory laparotomy some time before for a tumour which filled the whole pelvis; it was quite fixed, and removal was not attempted, so the wound was closed. To his surprise, when examined 14 days later, he found the tumour had shrunk to half its former size, and it continued to diminish, so that when shown to the Imperial Society of Physicians at Vienna, it was no larger than a man's fist. He thought the disappearance might be due to the intense hyperæmia observed during the operation; in the same way sometimes sarcomata may disappear under the influence of severe erysipelas. Cases also occur where, for a time, in malignant cases great improvement takes places as the result of exploration, but these cases always relapse and the patient soon succumbs.

In this connection I shall now relate a case of which I had personal experience. It is as follows :—

In October, 1891, I was consulted by Mrs. B., a nurse, æt. 28, spare in habit and of a sanguine temperament, for a tumour she had recently felt in the neighbourhood of the umbilicus. She had always been healthy had been married and was the mother of one child æt. 8 years. Never had any miscarriage and no history of syphilis. No tuberculosis in family, never had

any jaundice nor had she ever had anything like severe colic. For some time has not been feeling well and not up to her work ; has frequent elevations of temperature and occasional sweats ; her appetite good and there are no symptoms pointing to any affection of the stomach, no vomiting or dyspeptic symptoms.

Notes of Examination.—On examining her in the recumbent position a tumour the size of an orange is felt to the right and a little above the umbilicus. This tumour is smooth, very tender to the touch and moves with the respirations. It can be pushed to the left side, under left costal cartilage, and to the right apparently under the edge of the liver. In fact the tumour is very freely movable. Occasionally the tumour is very painful and it is always tender to the touch. I did not examine her again until Dec. 20th, as she had in the meantime gone about her nursing duties in the hospital, but these she soon found too much for her and she was compelled to take to her bed. Her temperature was carefully registered and she was closely observed. Her temperature was always 101° at night and 100° in the morning. Every other day she had a severe sweat. She said she felt more comfortable up than in bed, for then she had her corsets on, and these when tightly laced, kept the movable tumor in its place. On examining her waist a well marked line of constriction was seen to pass immediately above the tumour when it was in its normal position. It was thought that the tumour was caused by a lacing lobe of the liver, with probably an enlarged gall bladder beneath. Not getting any better, and being anxious to have something done, she consented to an exploratory incision.

Operation, Dec. 23rd, 1891.—An incision was made in the median line above the umbilicus, and the left lobe of the liver was immediately come down upon. On examination a portion of this lobe was seen to be quite abnormal in appearance and very definitely marked off from the healthy part by a distinct line. This abnormal portion of the liver commenced at the great fissure where the round ligament entered, and extended upwards to a furrow, corresponding to a lacing furrow, and to

the left it reached to the edge of the left lobe, where the lateral ligament leaves the liver. This portion was thick, somewhat puckered on its surface as if from cicatricial contraction. It was of a deeper color than the rest of the liver. A needle entered into the cicatrical part with difficulty, but in other parts no resistance was offered to the entrance of the needle. On holding the lobe between the finger and thumb well marked nodules, like masses of new growths, were felt. Adherent to this part of the liver were some portions of omentum. On removing these, the liver bled freely and hæmorrhage could only be stopped by application of the cautery, indeed this abnormal portion differed from the ordinary cirrhotic lacing lobe in that it was exceedingly vascular. There was some intention of removing this diseased portion of the liver, but it was decided not to do so, because the pedicle was so broad and the parts were so vascular, so the wound was closed.

The patient after operation had some pain for 24 hours and distension, but went on to an uneventful recovery. After the exploratory incision she had no more tenderness, and after the first day no more pain. Her sweating ceased and her temperature became absolutely normal. On examining her a few weeks after operation the tumour could still be felt, but it was immovable. She soon returned to her work and complained no more, in fact she was perfectly cured, and when last heard from, some short time ago, she was in perfect health and able to perform all her duties as superintendent of a hospital. The tumour disappeared within a year of the operation—or at least could not be felt.

Thinking the case might be of specific origin, I put her on Potassium Iodide for some time, which may have had something to do with the disappearance of the tumour.

No doubt the benefit derived from simple incision, without any other procedure, is due in many cases to the moral effect of the operation itself, or expectation, as in metallic therapy, and this accounts for the marvellous cures reported as following the application of the new and extraordinary methods of treatment, such as faith cure, visits to shrines, laying on of hands,

&c. Many of the diseases thus healed being those of the imagination are cured by imagination. Again, certain operations on the eye have relieved nervous symptoms and trephining the skull without further procedure has temporarily cured epilepsy. This would explain the disappearance of pain and tenderness after exploratory incision, but not the disappearance of tumours or alterations in temperature, so other causes must be looked for, such as those suggested by Dr. White, viz., relief of tension, reflex action, &c., or perhaps some causes working in ways mysterious, and of which we know nothing, but to which we give such names as *altered nutrition*, *trophic disturbance*, *nervous influence*, &c., &c. No doubt these cases in time will receive suitable explanation, but at present we are in the dark as regards them. In many cases such symptoms as pain and tenderness with general discomfort may be due to adhesions which at the time of the operation are released ; for instance in the case I reported above, the omentum was adherent to the liver, and its release may have banished the pain and tenderness. In many cases of nephralgia exploratory incision has caused relief. I myself have had several such cases, but in every case the kidney was more than usually movable, and now I think the explanation is generally accepted that in cases of nephralgia, where no calculus is found, the cause of the pain is due to twisting of the ureter of a more than usually movable kidney, and that operation tends to fix the kidney in place.

No doubt many of you here will be able to add to the cases I have narrated, and perhaps some of you may be able to explain them more satisfactorily than the reader of the paper.

Discussion.—Dr. Smith thought the curative effects were due to the improved nutrition resulting from stimulation of the peritoneum at the time of the operation.

Dr. Wm. Gardner had seen excellent results follow exploratory laparotomy in two cases of tuberculous peritonitis. These were already reported to the Society. In a case of grape tuberculosis of the peritoneum he recently reported, the patient was in no wise benefited, but this case had advanced pulmonary tuberculosis as well, which would alter the prognosis. He doubted whether malignant disease of the abdomen was

benefited by this operation, and had never himself seen any improvement in such cases.

Dr. Johnston asked if the patient had been informed of the negative result of the operation.

Dr. Springle suggested that the improvement in Dr. Shepherd's case might be due to the application of the cautery to the liver. He wished to know what time had elapsed in Dr. Shepherd's cases as in a recent case of reported cure of malignant disease by laparotomy there was a subsequent relapse.

Dr. Wesley Mills said that he had a theory explaining the beneficial results in these cases which he hoped to bring before the notice of the Society at some future time.

Dr. Jas. Bell stated that he was sceptical with regard to the curative effects of laparotomy. In cases reported as having got well the diagnosis was usually obscure, and this was true of Dr. Shepherd's case. He wished to ask Dr. Shepherd if he had ever known of a case, in his own experience or that of others, where a tumour of undoubted malignancy had disappeared as a result of exploratory laparotomy. In malignant disease the symptoms were sometimes temporarily arrested after a laparotomy. Tuberculous peritonitis was a self-limiting disease.

Dr. Shepherd, in reply, said that the patient was informed of the fact that nothing radical had been done at the operation. The cauterization had been so slight that it was impossible to believe it had any influence at all. He had not intended, in his paper, to introduce the question of the curative effects of laparotomy in tuberculosis. He had seen cases which improved after laparotomy, but thought they would have got well in any case. The operations had been done because the disease was believed to be something else. He thought Dr. Bell had misunderstood his statement as to the relations between exploratory incisions and malignant disease of the peritoneum. He did not assert at all that malignant disease had been cured in this way. On the contrary, he had said that Mr. Tait's case would be much stronger if a microscopic examination had been made. Still, those deficiencies in the evidence do not explain away the fact that something does take place. Tumours have disappeared—not ma-

lignant ones, perhaps,—and processes which had previously invalided a patient have been arrested. In his own case a piece of the tumour was not taken for examination simply because its great vascularity rendered severe bleeding likely. Of the other cases referred to, in a good many the improvement had persisted for several years; in others a few months only had now elapsed. It was hard to say if the arrest of malignant disease after operation was due to the operation. He would like to hear the new theory which Dr. Mills had referred to, even if only a partial statement could be given.

Dr. Wesley Mills considered it unsatisfactory to bring forward new views without having at hand sufficient evidence to support them. He might say, however, that he would explain the matter by *reflex*. He thought we explained too little, rather than too much, by this agency. For his part he believed life itself to be a reflex phenomenon. In the question under discussion the reflex acted on the blood vessels, the cells, and in fact on the whole metabolism. He disagreed with the agnostic standpoint taken by Dr. Bell.

Hæmorrhagic Typhoid.—Dr. Adami brought forward the results of an autopsy, presenting a peculiarly rare condition, performed upon a patient æt. 19, who had been admitted to the General Hospital in November with empyæma, under Dr. Molson, had been transferred to the surgical wards under Dr. Bell, and there had been operated upon, a silver drainage tube being inserted. The empyæmatous condition under daily drainage improved greatly, but the patient continued weak, with indications of pneumonic disturbance of the left lower lobe. A week before death symptoms of peritonitis supervened, with continual diarrhœa, incontinence of fæces and great distension of abdomen. The patient died eight weeks after admission. The continued emaciation aroused suspicions of tuberculosis, while the septic nature of the temperature chart, seemed to render it not impossible that the empyema of the lower half of the right pleural cavity had led to a sub-diaphragmatic abscess with subsequent extension and peritonitis.

At the autopsy neither of these conditions was found present; the empyema had healed with firm fibrous adhesion of the lowest

lobe to the chest wall. But there were typical evidences of typhoid. The last twelve inches of the ileum contained five ulcers, three of which had undergone perforation, although two of the three perforations were covered externally by thick inflammatory lymph. The typhoid was complicated with hæmorrhages. Petechial and ecchymotic hæmorrhages were found most widely distibuted:—Subcutaneous, (mostly on chest, neck, and upper extremities); along the course of the alimentary canal; gums, tongue, tonsils, œsophagus, stomach, small intestines and large intestines, being particularly numerous in the jejunum and ileum, and these both sub-mucous and sub-serous; in the heart, (both sub-endocardial and sub-pericardial); in the substance and on the surface of the liver and kidneys; in the right suprarenal (sub-capsular); in the retroperitoneal lymph glands; in the bladder, (both sub-mucous and sub-serous,) and again in the consolidated lowest lobe of the right lung. There had been a more profuse hæmorrhage into the pelvis of the right kidney. Cultures from the organs gave a preponderance of the bacillus coli.

Dr. Bell said that on Jan. 10th. there was great pain and distension of the abdomen, followed by collapse and subnormal temperature. Perforative peritonitis was diagnosed, but it was thought to be possibly due to the burrowing of pus from the empyema into the abdomen.

Ruptured Tubal Pregnancy—Report on the Ovum—Dr. Adami reported the result of the examination of the specimen, 5.5 mm. long, attached to the wall of the ruptured Fallopian tube exhibited by Dr. Armstrong at the last meeting. It showed very great evidences of degeneration, and all that could be said was that it more closely resembled an embryonic structure than any other object. There were no signs of fœtal membranes surrounding it. Serial sections had been made and showed that the object was bilaterally symmetrical and nourished by a vascular pedicle attached to the wall of the sac. There were no structures which could be distinctly recognized as fœtal organs, although the cell structure as a whole was of distinctly embryonic type. In a normal embryo of this size numerous organs would be recognizable. It was possible that degenera-

tive changes and invasion by leucocytes accounted for the discrepancy. The object was certainly not a tumour or parasite. The inner surface of the sac in the neighbourhood showed papillæ, though no typical chorionic villi were met with.

Dr. Mills referred to some experiments in artificially changing the environment of ova. These had led to astonishing anomalies in the ova. He thought the object in the present case to be an ovum.

Dr. Smith considered that the specimen was an ovum.

Dr. Armstrong remarked that the history of the case was that of a ruptured tubal pregnancy.

Chronic Intermittent Leuchæmia in a Child.—Drs. Finley and Adami reported this case.

We venture to bring forward the present case not because we feel absolutely convinced as to the correctness of the diagnosis (though at the same time it is difficult to see what other diagnosis satisfies all the details of the case), but because it seems to us that the uncommon clinical history and the appearances discovered at the autopsy are worthy of being placed upon record. For the very full report of the case we are indebted to Dr. Mackenzie, house physician of the Montreal General Hospital.

S. D., a deaf mute, but nevertheless a bright and intelligent looking girl of eleven years of age, was born and lived till she was seven years old in California. The mother, who is a robust woman, has had four children and no miscarriages, the father is alive and has some pulmonary affection.

The third day after birth a large swelling formed under the left ear and advanced forward to the cheek. This was poulticed and discharged a large quantity of pus. She was a sickly infant and suffered much from colic. At eleven months old she had an attack of whooping cough ; when she was two years of age it was noticed that she could not hear. At four she suffered from measles, and at the onset of this attack occurred the first hæmorrhage, three cupfulls of blood being vomited. Next morning there was a slighter hæmatemesis, and after this her condition was very weakly. When she was seven years old she vomited up a tea cupful of blood without any premonitory symptoms, and without serious disturbance to her health. At eight she suffered a double rupture, for which she afterwards wore a truss. For the past five years her general health, if not robust, has been fair ; she has been able to drive the cattle on the farm, has had a good appetite, and has not suffered either from diarrhœa or from hæmorrhoids.

Recently she was admitted to the Mackay Institute and there learned to articulate a few words.

Upon December 30th last, she gave evidence of feeling unwell and

spat up some mucus stained with blood ; later in the day, while in the housekeeper's arms, she brought up a large quantity of blood, estimated at about two quarts ; she became very faint. Saline enemata were given with good effect and she was confined to bed until January 1st, when she was admitted to the General Hospital under Dr. Finley.

Here her condition was found to be one of marked anæmia ; the temperature was normal, the pulse 120, small and regular, the tongue large and fissured along the median line, with small fissures branching off.

Upon examination of the abdomen, some fulness was noticed in the left hypochondrium, and an oval tumour was made out, extending from the costal margin to just below and to the right of the umbilicus, while to the left it extended back to the line drawn upwards from the middle of the crest of the ilium. It could be palpated bimanually and was movable. The dulness extended upwards, merging apparently into an area of thoracic dulness, whose upper margin was 2 inches above the nipple.

The liver dulness was diminished, being 3½ inches across in the right mammary line.

The heart lay in normal position ; both apex and pulmonary systolic murmurs were present, soft in character.

The blood was pale and scanty, the amount of hæmoglobin was reduced to 38 per cent., the red corpuscles reduced to 2,240,000, the white increased to 1200, and in some specimens of blood examined by Dr. Finley, the proportion of white to red had risen to 1 to 80. No change in the character of the corpuscles was noticed.

The urine was normal, though small in quantity (16 ozs. in 24 hours). The stools were normal, one mass was of dark blood-stained colour and with it came a little blood-stained fluid. The larynx was normal, the drum of the left ear concave.

The patient's condition improved in hospital ; upon the 5th she was bright and cheerful and seemed to have gained in strength. At half-past five she had her supper of bread and milk. This seemed to bring on nausea, and after a few minutes she vomited with scarce an effort 20 ozs. of bright blood, which rapidly clotted. She was immediately given ice to suck, an ice bag was placed upon the epigastrium and ergotin was injected subcutaneously. Ten minutes later a smaller quantity of blood was vomited. A stool passed at the time of the first hæmorrhage was normal and bloodless. Saline enemata were now given. At 6.20 a third hæmorrhage occurred, followed by three more ; altogether 48 ozs. of blood was brought up from the stomach. The patient suffered from great epigastric pain and gradually sank, dying at 1.35 a.m. on the 6th.

We have entered into all these details in order to throw as much light as possible upon the condition found at the autopsy. This was performed eleven hours after death.

Autopsy.—The body was found fairly well developed and of large proportions for the age of the girl (eleven years). There was no excessive fat : the abdomen was sunken. The organs in the thoracic cavity were very pale, there was a little clear fluid in both peritoneal and pleural cavities. The blood present in all the cavities was fluid

and presented a peculiarly pale, diluted appearance. The heart was normal, the lungs rather sodden and œdematous.

Upon opening the abdominal cavity, the small intestines and other organs showed extreme pallor. The large intestines were distended and filled with almost clear fluid (the result of saline enemata given shortly before death). The liver was wholly retracted behind the ribs save that below the ensiform cartilage the left lobe showed for the extent of three-quarters of an inch. The spleen, which was of a dull pale bluish colour with well rounded edges, extended forward and downward to within an inch of the umbilicus.

The result of the examination of the various organs was as follows :—The spleen measured 20 x 8 x 3.5 cm. and weighed 410 grms. The surface showed a reticulated fibrous condition. The splenic vessels at the hilus were large, but not abnormally thick ; there was no local evidence of interference with the circulation of the organs. Upon section the trabeculæ were distinct and prominent ; the pulp was relatively scanty and pale, while the Malpighian bodies were not prominent. The microscopic examination bore out these naked eye characters, the most noticeable feature being the general intestitial fibrosis more marked in some regions than in others, although everywhere the trabeculæ were enlarged.

The liver was small, with sharp irregular edges, and weighed only 610 grm. one half as much again as the enlarged speen. The organ was very pale and had a distinctly cirrhotic appearance. On section, however, much of the fibroid change appeared to be superficial, and while the organ was firm and cut firmly, but few bands of fibrous tissue could be made out passing from the surface deep into the substance. Here and there were small isolated fibroid patches in the liver tissue. The gall bladder was small and covered by an unusual layer of fat, more than 0.5 c.m. in thickness. The ducts were pervious. Microscopically the main characteristic of sections of the organ was its leuchæmic appearance ; the capillaries throughout were large and easily recognizable, though there was not the slightest indication of central atrophy of the cells, of nutmeg liver ; contrariwise, it was difficult to recognize the individual lobules. The capillaries contained an undue number of leucocytes, in fact, certain of them were completely injected with these corpuscles. In addition the organ was markedly cirrhotic, but the cirrhosis was not of the common type. There was not anything approaching to a framework of increased fibrous tissue, but here and there were isolated patches of fibrous overgrowth, many perilobular, while some were within the lobules. The growth was of various periods ; some of the patches were of well formed fibrous tissue, but there were occasional areas of recent cirrhosis with small cell infiltration.

Certain capillaries in the heart muscle showed also this injection with leucocytes ; otherwise the heart muscle was normal, save that it showed, where the fibres were cut transversely, peculiarly well marked vacuolation. This vacuolation is frequently to be noticed in the cardiac muscle fibres of children, and it is questionable whether it should be regarded as a pathological condition.

Beyond their pallor, the kidneys, which weighed each 90 grms.,

presented nothing calling for remark, either macro-or microscopically, nor was there anything noticeable in the other abdominal and pelvic organs with the exception of the intestines.

The stomach contained 8 ozs. of clotted blood. There was no ulceration or evidence of localised or general inflammation. Careful examination, both by the naked eye and by the microscope failed to reveal any ruptured vessel or cause for the hæmorrhage, which would seem, therefore, to have been of capillary origin.

The jejunum showed blood-stained hæmorrhagic patches in its mucous membrane, which varied in length from two feet to seven or eight inches, and were separated from one another by areas of apparently normal intestine. The ileum was similarly affected, but to a less degree. In neither could any special hæmorrhagic point, or ruptured vessel be discovered. The cæcum was normal, the appendix thickened, its mucous membrane reddened and apparently inflamed; the follicles were slightly enlarged. The large intestine and rectum were normal.

There was no noticeable enlargement of the mesenteric or other lymph glands. The marrow of the sternum was red, but not increased in extent. It had not the dirty reddish grey color characteristic of leuchæmia. It may be added that the brain was not examined.

Two conditions might possibly explain the clinical and other conditions of this case: cirrhosis of the liver and leuchæmia. But there is much that can be brought against the former possibility. While enlargement of the spleen is frequently associated with cirrhosis, that enlargement is only moderate, and does not approach to the extent discovered in this case. Again cirrhosis fits in ill with the history of hæmatemesis, manifesting itself at irregular intervals over a period of seven years; and while the liver was undoubtedly cirrhotic, the fibroid change was not of either the ordinary or congenital syphilitic type.

On the other hand much may be said in favor of leuchæmia. The spleen was distinctly of the leuchæmic type; its large size and fibroid condition are both characteristic of splenic leuchæmia. The injection of the capillaries in liver and heart are in favour of this diagnosis: the hæmorrhages from the stomach and intestines also support it. The absence of any marked swelling of the lymphatic glands or of greyish red softening of the sternal marrow is not against it. Still there are difficulties in connection with this view of the case. Leuchæmia in children generally runs a rapid course, and if this be a case of the disease, we are almost bound to assume that it has had a duration of four, if not of seven years, the first hæmorrhage, of a type similar to the last, having occurred

when the child was four years old. Again while the proportions of white to red corpuscles, as determined by Dr. Finley, had become increased from the normal of 1 in 300 to 1 in 80, it cannot be said that this is a very great increase, especially when the facts are taken into account that correspondingly there was, through the antecedent great hæmorrhage, a diminution of the red corpuscles to less than half the normal number, and that one expects to find a post-hæmorrhagic increase of the white corpuscles.

Nevertheless, in certain cases of leuchæmia, the number of leucocytes present in the blood is capable of great variation from time to time, and taking into account the very typical spleen and the condition of the liver, I am inclined to consider that this must be regarded as a case of chronic, or it may be termed intermittent leuchæmia, in which it has happened that the observations upon the blood have been made at a time when there has been a relatively small increase in the number of white corpuscles. The state of the liver appears to me to sustain this view. Apart from the capillaries with their injection of leucocytes, the curious cirrhotic condition of this organ, with its isolated areas of fibroid change, some old and well developed, some comparatively recent, some external to the lobules, some within the lobules—all this is what might be expected to result from capillary emboli produced from time to time in the organ by masses of leucocytes.

Dr. Lockhart had seen the case three days prior to admission; she was lying near a pool of blood which looked normal in appearance. Ice to the epigastrium and perfect quiet were ordered. Later on repeated saline enemata were given with a wonderful improvement each time in the pulse, lasting for half to three quarters of an hour. During the afternoon she had three more hæmorrhages aggregating nearly a quart.

Dr. Lafleur said the number of leucocytes varied greatly at different periods in the history of leuchæmic cases. He asked what were the conditions of the lymphatic glands throughout the body, and of the bone marrow.

Dr. Adami said that the spleen measured 20x8x3½ cm. There was nothing noticeably wrong with the lymphatic glands. The bone marrow showed nothing abnormal. The

difficulty in adopting the theory of leuchæmia was that she must in that case have had the disease since infancy.

Atresia of Vagina, Hæmatometra, Hysterectomy.—Dr. Wm. Gardner exhibited the specimen, taken from a girl of sixteen, with a history of violent pain and vomiting occurring periodically at intervals of about three weeks. A firm tumour could be felt in the hypogastrium. No vaginal canal was present, though the labia were normal. As no evidences of a vagina could be obtained by rectal examination, abdominal hysterectomy was done by the method of tying off the broad ligaments. The uterus was found to be greatly hypertrophied and was full of blood, the right tube was normal, and the left distended with blood. The depth of the uterus was from 8 to 10 inches. The blood measured over 1½ pints and had the ordinary characters of retained menstrual fluid. Such extreme conditions were, he believed, extremely rare. The operation was a success.

Aneurism of the Ascending Aorta with Erosion of the Ribs.—Dr. E. P. Williams showed this specimen which had been sent by Dr. H. P. Shaw, of Perth, Ont.

G. B., æt. 56, was for many years foreman on some dredging operations, and occasionally acted as diver. Previously, at the age of twenty-one, he had malarial fever, and at twenty-five an attack of acute rheumatism. Since then he has had several acute attacks and constant chronic rheumatism. He comes of a healthy long-lived family, and has healthy children of his own.

During the summer of 1892 he suffered from anorexia and insomnia, and on the first of November he suddenly felt a sharp pain in the right mammary region, "like shoving in a red hot iron and drawing it out again.

The pain was paroxysmal and severe for five days, then the attacks occurred about every third or second day.

On Jan. 1, 1893, he noticed for the first time a small tumour in the right mammary region which, from time to time, would swell up and "lift"; the skin over it would become red and tender and then the paroxysms of pain began at the tumour, back, right shoulder and arm. After three or four hours the ribs seemed to "lift" and the pain would cease.

Upon examination at the Montreal General Hospital under Dr. Wilkins, a prominent pulsating tumour was found projecting forwards about 5 cm., and covered by reddened, œdematous skin. The most prominent part was firm but above, the tumour was soft and compressible.

The ribs were not felt under the tumour. Dulness extended slightly beyond its outline.

Pulsation was synchronous with the heart beat, a sharp systolic rise followed by a quick fall; a slight systolic blow after the first sound was heard over the swelling, while the second sound is heard distinctly.

Tracheal tugging could be obtained.

The apex beat was at the fifth left interspace and almost imperceptible. The sounds were normal, the aortic slightly accentuated. Pulse 72, of low tension; the radials were slightly thickened and pulsated equally. Respirations 20. Eyes normal.

After leaving the hospital the patient returned to his home. Dr. H. P. Shaw, who attended him, states that the pain became almost intolerable, only relieved by chloroform. Dyspnœa was severe and almost constant. The tumour was tense and heavy, requiring support by bandaging.

The temperature ranged from 101° to 104°.

On November 10th, after several attacks of syncope, he became unconscious and died comatose two days later.

At the autopsy, three hours after death, a firm clot was found in the aorta extending from the aortic ring as far as and into the great vessels of the neck, and projecting through the orifice of the aneurism. The sac was filled with soft clot. Both lungs were gangrenous.

The heart appears to be of average size with normal cavities and valves. The aorta is dilated, measuring at the ring 3 in. in circumference; one inch further, $6\frac{1}{2}$ in., and an inch beyond the left subclavian, $4\frac{1}{4}$ in. It is rough and shows irregular nodules of atheroma, some breaking down, some undergoing calcification.

The great vessels of the neck are also atheromatous, measur-

ing :—Innominate, 2 in. ; L. carotid, 1¼ in. ; L. subclavian, 1¾ in. in circumference.

Three inches from the aortic ring in the anterior wall of the aorta is a circular, thick edged orifice, 4½ in. in circumference, communicating with an aneurismal sac of large size.

In the course of its growth, the sac probably became firmly attached to the wall of the thorax, and then gradually eroded through the ribs and intercostal structures to form a false aneurism covered by the skin.

The posterior wall consists of the remains of the dilated arterial coat, which is firmly united to the inner thoracic wall in a circular manner, the diameter being 5¾ in. from the mid-sternum to the right axilla, and from the second to the fifth ribs.

Outside the thorax, the dilatation extends further in all directions, being about 8½ in. in diameter, as far to the left as the left costal cartilages, and from the upper border of the first rib to the lower border of the sixth.

The anterior wall is formed by the skin which is thin and vascular, especially over the central portion.

Into the sac project the rough ends of the eroded and broken 3rd, 4th and 5th ribs, and the edge of the sternum, which is rough and eroded between the 3rd and 4th costal cartilages. There are also bits of semi-detached bone and adherent portions of more or less organized clot.

Stated Meeting, February 9th, 1894.

James Bell, M.D., President, in the Chair.

Dr. Robert Wilson was elected a member of the Society.

Purulent Pericarditis with Neurosis of the Sternum.—Dr. C. F. Martin showed the specimens obtained at an autopsy upon a male infant 17 days old who had died of purulent pericarditis. The labour was premature at 8 months, and the child sickly at birth. There was a sinus in the præcordial region, close to the sternum, leading directly to the pericardial sac, which contained some purulent fluid and flakes of lymph. There was necrosis of the sternum, which appeared to be the origin of

the trouble, as the process there appeared of earlier date than that in the pericardium. There was no evidence of syphilis or tubercle and no signs of infection through the umbilical cord. The external portion of the cord had not been detached, but was represented by a small shrivelled body 2.5 cm. long.

Dr. Evans related the history of the case. The parents were both healthy and the labour had been easy. The child was small and sickly at birth, weighing only 3 lbs. 15 oz. On the 5th day it was noticed to be nursing badly; on the 8th a small pimple, from which pus could be squeezed, was noticed over the sternum. On the 13th day an abscess was opened in this region. Subsequently a probe passed into the deeper part of this abscess, entered a sinus leading into the pericardium, and the heart beats could be registered by the movements of the probe.

Dr. Bell asked if the incision made in opening the abscess had been continued down to the pericardium.

Dr. Evans replied that such was not the case, the communication with the pericardium had been discovered a day or two later.

Epilepsy—Abscess and Cyst of Brain—Trephining and Exploratory Puncture.—Drs. Bell and Adami exhibited the specimens obtained at the autopsy in this case and gave the clinical history.

Discussion—Dr. Jas. Stewart had seen the case once in consultation. He thought the results of the post-mortem did not lessen the probability that the symptoms were due to irritation of the motor area, and thought that the cyst was the cause. After the operation he had thought the diagnosis was wrong, but the autopsy showed that it was right after all. It was not necessary for the lesion to be actually situated within the motor area in order to irritate it. He thought that there must still be some lesion not yet discovered (possibly of the internal capsule) as the cyst would not account for the paralysis. He though the case could not fully be discussed at present as the report was not complete. The electrical reactions were normal.

Dr. Mills thought we were too rigid in our interpretation of what we mean by the motor area, and that it really is a sensori-motor area. The time has come to look for a wider

definition which will include such anomalous cases as the present.

Dr. Wilkins said that the ganglion cells of the cord were probably involved as shown by the wasting of the muscles.

Dr. Adami said that it had not been possible to examine the cord. The examination of the brain was not finished as the specimen was not fully hardened.

(The discussion was postponed.)

Calcified Plates from the Pleura in Empyæma.—Dr. Adami exhibited some calcareous plates removed from the pleura after resection of the 5th and 6th ribs. These looked like exfoliations of bone, but proved on examination to be merely deposits of calcareous salts in the thickened pleura following empyæma.

Dr. Bell said that the patient was a man aged 48, who gave a history of a pimple having burst 8 months ago on the 5th intercostal space anteriorly. Since then pus had flowed from the wound. On resecting the ribs there was no appearance of exfoliation, but the empyæmal sac, which had a capacity of about one pint, was lined with these bony looking plates. Though the history only dated 8 months back it was possible that the disease had existed unperceived for some months or years. The patient was a tuberculous subject.

Cancer of the Body of the Uterus.—Dr. Wm. Gardner showed the specimen from an unmarried woman aged 55. There was a history of pain and bleeding coming on some time after the menopause, and which had lasted 6½ years. He had seen the patient 2½ years ago, and found the uterus enlarged. The cervix was normal. Upon curetting, some friable material was obtained which proved to be cancer on microscopic examination. Operation was advised, but refused. The patient afterwards went to Europe and acted as courier to a party of tourists. Ten months ago she was examined and some material which was shown to be cancer microscopically, again removed from the uterus. Consent to operation was again refused, but owing to the severity of the pain and hæmorrhage was afterwards consented to. The operation was through the abdomen as the vagina was narrow and atrophic. There were no adhesions. Near the fundus were two small pedunculated

sub-mucous myomata, one of which was partly calcified. Recovery was uneventful.

Dr. Smith thought that in any woman in whom uterine hæmorrhages recommenced a year or more after cessation of the menses the case should be considered as cancer until the contrary was proved.

Albuminuria of Pregnancy.—Dr. Smith showed some specimens of urine showing the rapid disappearance of a large amount of albumen in the urine after delivery. The patient had nearly lost her life a year ago from puerperal eclampsia. Subsequently, on becoming pregnant, her urine was examined weekly, and as it suddenly became to be highly albuminous in the fifth month, in consequence of a slight chill followed by convulsions, labour was at once induced, and the urine became nearly free from albumen in a few days. These cases should never be allowed to go on to full term.

Synopsis of One Hundred Cases of Scarlet Fever.—Dr. Spiers read the following paper: .

The first one hundred cases treated in the Montreal General Hospital during the present epidemic may be divided into the following classes:—

(*a*) Of mild cases, showing all the symptoms of scarlet fever with a moderate fever and a little failure of the general health, there were forty.

(*b*) Of moderately severe cases, with a high temperature, a severe angina and intense rash, with considerable depression, there were twenty-nine.

(*c*) Of severe cases with a continued high temperature, ulceration and destruction of the tissues of the throat and involvement of the glands of the neck, there were thirty-one.

In over 50 per cent. of the mild and moderate cases convalescence set in on the fourth or fifth day by crisis, the temperature falling in a few hours two or three degrees, then by lysis reaching normal by the end of a week or ten days. In a few cases the temperature fell to normal in twenty-four hours. The remainder of the cases reached the normal by a gradual lysis in from five to ten days.

The rash in many cases presented peculiar appearances. In many of the mild cases it was apparently absent or very transient, or appeared only in certain parts of the body, chiefly on

the neck and chest, in the form of erythema. In three cases minute red spots without a general redness appeared.

In the moderately severe cases the rash, as a rule, presented the appearances generally described, but two or three presented a distinctly papular rash, these papules being especially distinct on the back of the hands and forearms.

Among the severe cases anomalous rashes were common. One case presented a papular hæmorrhagic rash over the whole body without any distinct coloration of the skin between. Two or three cases had very numerous small vesicles over the whole body. The case of a young child presented the appearance of an acute exfoliative dermatitis.

The throat in mild cases showed, as a rule, redness and some slight swelling of the soft palate and tonsils. In the severe cases the whole palate, pharynx and tonsils were intensely red and covered with sticky mucus. In the most severe cases ulceration and destruction of the tissues occurred, accompanied by a fœtid odour. In these cases also the glands of the neck became swollen and inflamed, frequently running on to suppuration. A general pyæmia has been frequently set up.

In one case sloughing of the tonsils and cellular tissues of the pharynx occurred, leaving the muscles of the pharynx clearly dissected out. In another case an abscess developed behind the soft palate, which was evacuated by an opening through it with immediate relief.

A large number of cases presented a diphtheritic appearance. This was most common among the moderately severe cases, but was also common in the very severe cases. They were always accompanied by enlargement of the glands of the neck, which very occasionally went on to suppuration. This diphtheritic condition occurred in 8 per cent. of the cases.

The digestive system was not, as a rule, much disturbed, except the appetite was lost. Vomiting was persistent for four or five days in four cases. Diarrhœa was troublesome in three cases early in the disease. In fatal cases it frequently set in during the last three or four days.

The complications and sequelæ have been numerous and varied.

The most frequent and most dangerous was inflammation of the glands of the neck. This occurred in 19 per cent. of the cases. The most dangerous was that form with an ulcerated condition of the throat. It generally ran on to suppuration and was by far the most frequent cause of death, five deaths occurring from this cause, while only three recovered.

A less important form was that accompanying the pseudo-diphtheritic angina. This only went on to suppuration in one case and caused no deaths. These two forms have occurred in the first two weeks of the disease. Three per cent. of the cases suddenly developed an acute inflammation of these glands during the third week of convalescence. It set in with chill and high fever and a rapid enlargement of the glands took place. In two cases complete recovery took place by the third day, but one ran on to suppuration.

Acute nephritis occurred in 8 per cent. of the cases coming on insidiously in the third or fourth week. Death occurred in two cases with complete suppression of urine and convulsions. In five apparent complete recovery took place after two to three weeks. One case, the only one in which dropsy was markedly present, became chronic.

Otitis media occurred in 6 per. of cases, most frequently with the pseudo-diphtheritic angina, but occasionally with the mildest cases. It may occur at any time during the first four weeks of the disease.

True diphtheria has been present in four cases, but cases have been frequent coming into the hospital suffering from diphtheria, and evidently only shortly convalescent from scarlet fever.

Arthritis was common following this disease. A large number complained of slight pain in one or more joints. Three per cent. have suffered from severe attacks resembling acute rheumatism with fever and swelling of the joints. In one case double hip joint disease rapidly developed with dislocation of the heads of both femurs upwards and backwards. There was no evident formation of pus.

In another case a so-called white swelling became purulent; rapid and extensive destruction of the joint followed.

Mitral disease developed in 2 per cent. of the cases.

A purulent discharge from the vagina occurred in two young

children during the fifth week, which disappeared in a few days.

A distinct relapse occurred in one case at the end of the first week of convalescence. The whole course of this second attack was very severe, while the primary attack was very mild.

Ten per cent. of the cases treated died, the causes being as follows:

Nephritis, two deaths; ulcerated condition of the throat with involvement of the glands and pyæmia, five deaths; diphtheria, one death; pneumonia, one death; and one death due apparently to the intensity of the poison.

All but one death have occurred among young children, though fully 25 per cent. of the patients have been adults.

The adult who died was a chronic drunkard.

Tabulation of Cases.

Mild	40
Moderately severe	29
Severe	31
	100

Complications.

Well marked inflammatory enlargement of the glands of the neck	19
Acute nephritis	8
Otitis media	6
Diphtheria	4
Severe arthritis simulating acute rheumatism	3
Mitral disease	2
Pneumonia	1
Relapse	1

Deaths.

Malignant scarlatina	1
Acute Nephritis	2
General pyæmia	5
Diphtheria	1
Pneumonia	1
	10

Discussion.—Dr. E. P. Lachapelle referred to the severe epidemic of scarlatina now going on in Montreal since October last. The reported weekly mortality was at present 20 to 30, but the real mortality was much larger, as a large number of cases were improperly certified. An inspection made

by the Provincial Board of Health showed that the medical profession was mainly responsible for this unfortunate state of affairs, as it was impossible for the health authorities to do anything unless they knew of the cases. In Montreal two-thirds of the physicians never report cases of infectious disease at all. Whether this was because they do not think of it, or do not care, or object to do it, the result is very bad. No one has any doubt to-day as to the contagiousness of scarlatina or the duty of medical men to report cases, if the heads of families, who are also responsible, neglect to do it. If only a few men report they suffer in consequence. If the profession are lax in regard to one contagious disease, they will be so in regard to others. The public is at the mercy of the physician He hoped the Society would pass resolutions insisting upon the necessity of all cases being reported.

Dr. Lafleur said that he always reported such cases as soon as a diagnosis was made, but that many days often elapsed before the house was placarded.

Dr. Allen mentioned a case where he had attended a patient in a boarding house. Upon the statement of a member of the household, the board of health disinfected the house and removed the placard, although the patient went on desquamating for two weeks subsequently.

Dr. Johnston thought there were too few physicians in the staff of the City Health office. Most of the disinfection and visiting appeared to be left wholly to sanitary policemen without any supervision, hence mistakes were often made. Work of this kind should be carried out under medical direction.

Dr. Kenneth Cameron stated that his experience in this epidemic had changed his previous opinion that scarlatina is a mild disease. His first case was one of the hæmorrhagic form, and was fatal in 6 hours. He thought the infection was largely spread by mild cases which were not diagnosed. He had seen several instances in school children in whom the occurrence of dropsy had first drawn attention to the real nature of the case.

Dr. Buller estimated from the statement made by Dr. Lachapelle, that there must be 500 cases occurring weekly. This probably would give one or more cases in every street in the city. He would advocate stopping the whole public

school system, and so calling public attention to the necessity of providing some proper means of quarantining cases. The supineness of the local health board could only be overcome by taking strong measures such as would arouse public indignation.

Dr. McConnell stated that the local health board was not blameless, as for scarlatina patients there was no other provision for conveying them to hospital than the public cabs. Children were allowed to return to school within two or three weeks from the commencement of an attack. The health officer should see to it that such does not occur within at least six weeks. He had little faith in the utility of sulphur fumigation when clothing and bedding were not disinfected by heat. Much can be done to prevent the spread of the disease through a building by the floating particles of cuticle, if antiseptic ointments were used during the period of desquamation. Creolin, carbolic acid, salicylic acid and resorcin may be used, the latter has the additional action of promoting a more rapid peeling, so that this process may be completed one or two weeks earlier than the ordinary period.

Dr. Smith agreed with Dr. McConnell's statements. He made a practice of using carbolized vaseline and giving a hot bath every 24 hours, and tried to promote sweating. He gave copious drinks of water to flush out the kidneys.

Dr. Mills said that whatever were the shortcomings of the local health board we should not take shelter behind them. There had been a serious delinquency on the part of the profession, and we might as well admit it. He would recommend that a deputation of the Society wait upon the City Council and urge the adoption of suitable measures for restraining the epidemic. Most of the cases in school children could be watched through the co-operation of the family physician. To close the schools would produce a panicy condition prejudicial to the community.

Dr. Armstrong thought that the reason why cases are not reported is that two families out of three object to having it done, and point out that their neighbours' cases are not reported. Placarding is of no use, as intelligent people will warn others of the danger, and ignorant people will pay no heed to it. Nothing was accomplished by the antiquated methods of disin-

fection which constitute the only resource of the local health board; they make a little stink and do nothing more. Disinfecting was properly done only when the family physician went to the trouble, personally, of explaining how it should be carried out and superintended it himself.

Dr. Lachapelle could not agree with Dr. Armstrong. Two wrongs do not make a right. Whatever might be the faults of the local board, the profession was much to blame. If we, as a profession, had done our duty we would have more right to complain. He approved of placarding, as it was likely that servants would not do their duty in warning people, whereas a placard warned every one of the danger. He did not think the situation was severe enough to warrant such a step as closing the schools, and the well children would run just as much risk at home. The Society might depend upon the Provincial Board of Health doing their duty, however unpleasant it might be.

Dr. Gordon Campbell said that some weeks ago, in a house fumigated by the city health officials, the clothing had not even been stripped off the infected bed. Some weeks later another case developed in this house. In St. Cunegonde absolutely nothing was done when cases were reported.

Dr. Bell, in summing up the discussion, said that if we first took the mote from our own eye we would be better prepared to remove the beam from that of the local health board. While sympathizing with what Dr. Armstrong had said, still even when put in a false position, the members of the profession should be guided by their strong sense of duty, and do all in their power to check the spread of the disease. The present was a good time for the Society to express itself strongly to the incoming municipal council. It was simply disgraceful that Montreal had no place for quarantining scarlet fever, and through the absence of such a place we were now losing 50 lives weekly, not to speak of those who were afflicted with life-long consequences in the shape of affections of the ears, or kidneys. He would suggest that the matter be referred to the council, with power to add to their number and instructions to act.

Upon motion of Dr. Mills, it was unanimously resolved that the council should associate themselves with Dr. Lachapelle, and should take whatever action appeared necessary.

Stated Meeting, Feb. 23rd, 1894.

JAMES BELL, M.D., PRESIDENT IN THE CHAIR.

Cholesterin Cyst of the Testis.—DR. ADAMI exhibited a cyst of the tunica vaginalis testis, removed post-mortem, which contained two ounces of a clear fluid, full of pure cholesterin crystals. The history of the case was that the patient, a man advanced in years, was brought into the hospital with paralysis of the left side, and with deviation of the eyes to the right. He rapidly lost consciousness, and after lingering a few days, died. At the autopsy a large hæmorrhage was found in the corpus striatum. There was a condition of general arterio-sclerosis, granular kidneys, emphysematous lungs and hypertrophied heart. On the right testicle there was a large cyst, apparently in front of the organ and full of fluid. The walls were thickened and atheromatous and contained calcareous plates.

The question as to the origin of the cholesterin was difficult to answer. Cholesterin in large quantities may be found in connection with dermoids and with atheromatous degeneration, but in both cases the crystals are almost always found associated with fatty debris. Old chronic hydroceles are recorded also as showing atheromatous conditions of their walls, and occasionally containing large quantities of cholesterin. Such is probably the nature of the cyst in question, but how and why the crystals are deposited in large quantities requires further explanation.

DR. JOHNSTON had seen cysts in various parts of the body which were lined with squamous epithelium and contained cholesterin. He had seen one such cyst situated deep in the cervix uteri.

DR. ADAMI said that atheromatous cysts are found in connection with the scalp, but in such cases fat and broken down tissue are among the contents, while in this case there was no fat or debris.

Dr. SHEPHERD exhibited the following specimens :—

(1.) *Supernumerary Digits in the Pig's Manus.*—Two pig's fore-feet were shown, each with a supernumerary digit. In each

case the digit was the lost pollex, and with it was reproduced to its full size, the os trapezium which, in the normal manus of the pig is a small rudimentary ossicle. Dr. Shepherd remarked that the re-appearance of the lost digit in the pig's manus was not very uncommon, and said that the normal manus consisted of two hanging toes, the second and fifth, and the toes which reached the ground, the third and fourth, so that when a supernumerary digit was seen it was always the lost pollex, and with it was reproduced the os trapezium of the carpus. A couple of years ago he presented to this society a specimen of a pig's manus having a pollex and pre-pollex, six digits in all, a variation which was of greater rarity than the one above described.

(2.) *Boat Shaped Negro Skull.*—The skull was that of a full-blooded negro, and with a very small cranial capacity, in fact micro-cephalic, and very prognathous. The skull was long and very narrow, and of the form usually described as scaphoid. This was due to the absence or early obliteration of the sagittal suture, hence the transverse growth being prevented, a great increase takes place in the vertical and longitudinal direction, thus giving the vault of the skull a boat-shaped shape. This was well shown in the specimen exhibited. At the site of the anterior fontanelle the bone was raised into a prominent boss, due no doubt to the later ossification at this point. This form of skull is said to be common amongst the Scotch, hence the term " long headed Scotchmen."

(3.) *Skeleton of Hawk with Multiple Fractures.*— This specimen exhibited healed fractures of the femur, breast bone and the radius and ulna of each wing. The fractures had been no doubt due to shot, as one pellet was found in the breast bone and another in the right bronchus. The amount of callus thrown out was enormous, being necessary to unite the fractured ends of the bones which were a considerable distance apart.

Necrosed Polypus of the Uterus.—Dr. Lapthorn Smith exhibited the specimen which he had removed from a woman fifty-five years of age, the menopause having occurred several years before. For two weeks the patient had suffered from a

profuse fœtid discharge. Her physician found a large mass in the vagina, which was easily broken and bled profusely, so he thought that the disease was cancer. Dr. Smith found that the mass was movable, and under an anæsthetic, when he had removed a large quantity of necrosed tissue, discovered a pedicle springing from the fundus, and which was easily removed. After thorough disinfection, the uterus was stuffed with iodoform gauze; the patient made a complete recovery. Dr. Smith pointed out that the fœtid discharge, accompanied by hæmorrhage, rendered the suspicion of cancer very strong, especially in a woman so long past the menopause.

Cancer of the Body of the Uterus.—Dr. Lapthorn Smith exhibited a specimen of extensive cancer of uterus, in which the disease was confined to the body, the cervix showing no appearance of being affected. The patient had suffered from hæmorrhage, coming on several years after the menopause. Portions of tissue removed by the curette proved the disease to be cancer.

Osteo-Sarcoma of the Tibia and Fibula.—Dr. Hingston exhibited a tibia and fibula, in which large excavations were situated deep in the substance of the bones near their heads. The patient had come to him five months before, with a large, hard swelling at the back of the knee. Recognizing the malignant character of the growth, operation was advised, but the man would not submit until three days ago, when the leg was removed by the circular operation a little above the condyles of the femur. There were large cavities on the posterior surface of the bones just below their articulating surfaces, where the tumour had been removed, and the periosteum was detached for some distance on both bones. The appearance of the bones would lead one to suspect strumous disease had not the history of the case and the presence of the tumour pointed unmistakably to osteo-sarcoma.

Poisoning, Possibly from Lead, after Eating Canned Tomatoes.—Dr. Johnston and Mr. Wolff reported a case of a girl, aged seven, who was taken violently ill with vomiting and collapse within two hours after eating a large quantity of

tomato soup. Of the other members of the family, who had eaten the soup, the mother suffered from headache and nausea, while the rest were unaffected. The child died within sixteen hours. At the autopsy, no natural cause of death was found, but chemical analysis made independently by Dr. Ruttan and Mr. C. F. Wolff, showed the presence of a large quantity of lead within the liver. The case was of interest owing to the frequency of poisoning from canned goods, and the rarity with which any evidence pointing to the absorption of mineral substances had been established by analysis of the viscera.

Dr. T. D. Reed considered the evidence of lead from the tomato can being the cause of death in this case quite inconclusive. Canned goods are used in enormous quantities, and death from the lead in them is unheard of. Fatal acute poisoning from any lead salt is extremely rare, several drachms per day of lead acetate are given therapeutically, and quantities of one ounce have failed to cause death. The entire amount of solder in a tin would only represent a very few grains of lead. The few cases of death from canned goods heretofore reported have been attributed to decomposition of the contents of the can, but in this case, as the material was boiled into soup, it is difficult to accept the eating of the tomatoes as the cause of death. Most persons carry about with them in their bodies a small quantity of lead.

Dr. Johnston replied that the remaining contents of the can could not be obtained. He pointed out that though large quantities of the acetate may be taken with impunity, some other salts, notably the chromate, were highly poisonous. Some such poisonous salt may have been present in this case.

Dr. Hingston remarked that the carbonate, which is a poisonous salt, may be formed from the decomposition of the acetate.

Dr. F. W. Campbell suggested that the fatal result might have been due to decomposition of the tomatoes, and referred to two cases, that had recently come under his care, of severe poisoning from eating canned salmon. He pointed out that many years ago Dr. Joseph Workman recommended drachm

doses of the acetate of lead for post partum hæmorrhage, and he recalled a case which appeared to be acute lead poisoning following this treatment.

Intestinal Anastomosis with the Murphy Button.—Dr. Lapthorn Smith demonstrated the method of using this instrument for rapidly and effectually securing union between two portions of the intestinal canal, while leaving a lumen for the passage of the contents. The instrument consists of two metal discs, each having a central orifice about 1.50 c.m. in diameter. Each disc is attached to a portion of the bowel by having the free edges of the bowel drawn inward over it by a purse-string suture. The discs are then approximated and held in position by means of a spring which keeps up a continuous pressure upon the serous surfaces until union takes place, after which the compressed tissues slough away and the button is passed with the fæces. The advantages of this device are the rapidity and ease with which the operation is performed, the certainty of union, a large opening for the passage of the bowel contents while the union is taking place and the little or no tendency to subsequent constriction.

Amœbic Abscess of the Liver.—Drs. Finley and Adami exhibited the specimens and gave the history of the case.

The patient, a negro, æt. 37, was admitted to hospital upon January 31st, 1894, complaining of pain in the right side and weakness. The chief facts relating to his medical history were that he had lived for eleven years in Texas, that he had acted as cook on a vessel trading between Quebec and South America, and that he had also spent some time in Australia. He had never suffered from diarrhœa for more than a day or two at a time, and had never had dysentery. He had, however, two febrile illnesses, each lasting about three months, some years previously.

The present illness began a month previous to admission with febrile symptoms and diarrhœa. Some pain in the right side and weakness, together with nausea and vomiting were also present, but he had not taken to bed before his admission to hospital.

On examination the temperature was 101⅘, the tongue was coated ; there was no jaundice.

The intercostal spaces over the liver were full, and there was marked tenderness in the right epigastric region. Hepatic dulness began at the 5th rib, extending down for about 6 inches. Posteriorly there was dulness from the angle of the scapula downwards. Friction could be detected over the right inframammary region. The abdomen was otherwise normal. The urine was of a deep sherry color, 42 ozs. in 24 hours ; it contained no bile, albumen or sugar.

During the ten days that the patient was under observation the temperature remained almost constantly at 102, and there were no chills or sweats. The hepatic dulness during this period rose to the 3rd rib, and pus was withdrawn by the aspirator. Upon February 12th, Dr. Bell, after preliminary aspiration, opened the abscess posteriorly in the 9th space and resected the rib, allowing about 50 oz. of pus to escape. The patient did fairly well for some days, but sank rather rapidly and died upon February 18th, six days after the operation. Numerous actively moving amœbæ were found in the pus, together with much debris and a few leucocytes and red blood corpuscles.

The stools were examined for amœbæ during life with a negative result.

It is unnecessary to give all the details of the autopsy which was performed upon the day of death. Suffice to say that upon external examination there could be seen a wound in the ninth interspace and posterior axillary line in the right side ; this led through the region of the resected ninth rib to the liver, and from it could be expressed whitish necrosed tissue together with some pus.

Upon opening the thorax the right lung was found firmly adherent over all its surface, and greatly contracted and diminished in size. The adhesions were firm and close. It was found that the incision into the right lobe of the liver had passed through the diaphragm, but in consequence of the firm nature of the adhesions between diaphragm and costal wall, the pleural cavity presented no signs of acute recent disease, and had apparently been in no wise disturbed by the passage across

of the contents of the hepatic abscess. The liver, which weighed 2650 grm., was greatly enlarged, both upwards and downwards. It extended three finger breadths below the costal margin ; was of a fawn colour, and presented here and there upon the upper surface of the lobes frequent small white patches—necroses or abscesses—averaging 2 mm in diameter. The falciform ligament was well to the left of the ensiform cartilage, the right lobe being especially enlarged. In the substance of the right portion of the right lobe was a large abscess, with thick necrosed walls and irregular and shreddy internal surface. This extended from the under surface of the organ to within 2 cm. of the upper and outer surface of the lobe ; its breadth from side to side was 12 cm., and from above downwards it was 15 cm. (6 inches) across. Throughout the rest of the right lobe there were scattered a few other secondary abscesses ; the largest of these was 15 mm. in diameter.

The intestines were markedly congested. In the jejunum were a few subcutaneous hæmorrhages. Upon examination of the large intestine no signs could be made out of any dysenteric lesions. Close to the ileo-cæcal valve was a small whitish patch, which gave rise to the suspicion that there was a cicatrix, but upon closer examination the most that could be discovered was that here the mucous membrane was softened and thin, with no ulcerous or old inflammatory conditions. Here, then, as not unfrequently occurs, the amœbic abscesses of the liver were present without any indication of dysenteric intestinal lesions, either during life or at the autopsy. It is to be noted, however, that the hepatic flexure of the colon was in close contact with, and, in fact, adherent to that portion of the under surface of the right lobe of the liver, which was undergoing necrosis.

Beyond that the heart presented the condition of early pericarditis, and that the kidneys showed some acute parenchymatous nephritis, the condition of the other organs does not call for remark.

Stained sections of the liver and slough showed the presence of amœbæ ; these were best shown by staining with methyl-

blue and were faintly stained by hæmatoxylin. In the abscess cavity and its walls were numerous masses of streptococci. These were evidently of secondary growth, for the abscess contents were singularly free from pus cells, being mainly formed of broken down cheesy matter. Microscopic examination of the walls of the colon showed no evidence of necrosis.

In this case, therefore, the presence of fever, of hepatic enlargement, pain and tenderness, suggested the presence of purulent inflammation in the neighbourhood of the liver. That this was so was confirmed by the result of aspiration. Whether the abscess was sub-diaphragmatic or in the liver substance was determined by the discovery of the amœbæ in the removed fluid. These indicated clearly that the origin of the disease was in the liver itself.

The failure to find amœbæ in the fæces was explained at the autopsy by the absence of any dysenteric ulcers or necrosis in the colon.

This case gains an additional interest from the fact that so far as we know, it is the first recorded in Canada in which the amœbæ coli have been demonstrated in an hepatic abscess, if not in the living body generally.

Dr. Lafleur stated that this was the first case of the kind reported in Canada. The presence of abscess without dysentery is not at all unusual. He had seen three cases in Baltimore, which began as abscess of the liver, and in which it was only secondarily discovered that the patient suffered from dysentery, and in fact, this was so slight that it did not form an important part of the disease, the lesions in the bowel being very secondary and unimportant compared with those in the liver. The anatomical picture in this case was exactly like that he had observed in a good many fatal cases of liver abscess, in which the amœbæ seemed to be the cause of the disease, and he had no doubt that the microscopical examination would be found to correspond. The pus of the abscess really consists of masses of softened necrosed material, and, as a rule, unless there has been a coincident infection by pyogenic organisms, the leucocytes are very few in number. He added that since he

had written his share to the contribution on "Amœba in Dysentery," there have appeared in Germany and Austria a number of works upon the subject, which seem to favour the existence of a distinct form of dysentery caused by the amœba coli and which confirm the work done in Baltimore.

Stated Meeting, March 9th, 1894.

A. D. Blackader, First Vice-President, in the Chair.

Dr. O. F. Mercier was elected a member of this Society.

Xanthoma Tuberosum.—Dr. Shepherd showed a case and gave the history as follows :—The patient was a woman, aged fifty, who had suffered severely from jaundice, and was at present jaundiced. Three weeks before she had noticed some yellowish looking tubercles under the skin, which were of the size varying from that of millet seeds to that of peas. These grew larger and others appeared in the normal lines and folds of hand, and often on the surfaces of phalangeal joints; here the tubercles were fused together into a raised yellowish band, which were subepithelial. These growths looked as if they contained fluid, but on pricking them it was seen that they were dense and fibroid in character. Latterly tubercles of same character had appeared on the elbows and knees and also on the lips and side of nose. They were excessively painful when touched and pressed, and itched a great deal. The hands were continually perspiring. Dr. Shepherd said this was a somewhat rare disease, and was more common in women than men being often but not constantly associated with jaundice. The tubercles are not connected with the sebaceous glands as seen by their appearing so abundantly in the palms of the hands. They are no doubt growths of connective tissue with fatty degeneration, this giving the yellow appearance. They sometimes occur in the throat and fauces, trachea, heart, &c. Treatment is of little avail. The patches often disappear spontaneously.

Dr. Adami had made only a cursory examination of portions of the growths that had been sent to him, but would give a full report to the Society at a later date.

Dr. Buller had seen a great many cases of xanthelasma of

the eyelids, and he thought that there must be some marked underlying difference between the pathological processes of this disease as found in the eyelids and in the other parts of the body. In these cases he had never found any tenderness of the diseased portion, nor could he ever elicit any history of sick headache or hepatic affection, though he always made careful enquiries.

Dr. Foley enquired whether the growth was strictly confined to the corium or whether it penetrated into the deeper structure; he also asked if cholesterin crystals were present.

Dr. Adami replied that as the corium and the fibrous tissue below was very indefinite, Dr. Foley's question was difficult to answer; no cholesterin was found.

Arthrectomy.—Dr. Armstrong brought before the Society a man in whom a particularly favourable result had been obtained of an arthrectomy of the knee-joint, a partial incision having been performed last September. As could be seen, the man walked well and had a considerable amount of motion in the joint; the patella was also quite movable. The operation was performed by the transpatellar incision, the sections being reflected up and down, the tubercular disease was shaved off the patella and condyles, the patella was then sutured and the wound closed without drainage. The portions removed were submitted to Dr. Adami, who reported them to be tubercular. They seemed to resemble the dry atrophic form of tuberculosis which sometimes occurs in arthritic joints, the *caries sicca* of Volkmann.

The history of the case, which presented many points of interest, was as follows:—The man came to the hospital early last spring complaining of severe pain and practical immobility of the knee-joint. This pain was so severe that hypodermics of morphia were required to relieve him. There was very marked atrophy of the joint, which was then even more plainly seen than at present, the measurements being one to one and a half inches less than on the sound side. At the same time when the knees were placed together one could hardly tell which was the diseased joint, the outlines of the affected one being perfectly normal, there was no œdema, no puffyness, no redness to indicate disease.

In the absence of physical evidence, Dr. Armstrong hesi-

tated to operate and sent the man home after the pain had become somewhat relieved. He, however, shortly afterwards began again to annoy his family physician, who sent him back to the hospital with an urgent request that something should be done. The operation was then performed with the result already mentioned.

The case is of interest as showing a relationship between joint disease and arthritic atrophy, the pain and atrophy being here more marked.

Dr. Armstrong then cited the history of a case of hip joint disease, presenting very similar features, which he had met during last summer. Here also pain and atrophy were the only symptoms. With Dr. Shepherd he had examined the patient under ether several times without being able to decide on operation, but as the great pain was wearing the man down to a shadow, he at last opened the joint and found distinct tubercular disease in the floor of the acetabulum, and the head of the femur was in a condition of caries.

The result had been very favourable, and Dr. Armstrong regretted that he could not find the man to bring him before the Society.

Dr. Shepherd had seen the case with Dr. Armstrong, and from the external appearances no one would have thought that there was a tubercular condition present in the joint. From the experience gained from this case he would be more ready to open such joints in future.

Dr. James Stewart on being asked to express his views on arthritic atrophy, thought that there was but little to be said on the subject; there are explanations for all forms of atrophy except this one. Some hold that its nature is that of a reflex process, but this is a convenient term to use, when we know nothing about a subject, and such is probably the case here.

Frogs with the Cerebrum Removed.—Drs. Mills and Morrow exhibited two frogs deprived of the cerebrum, and demonstrated that they were capable of co-ordinated movements of the most complicated kind, including Goltz's "balancing experiment," *i.e.*, the frogs would, when a surface on which they were resting was gradually tilted, move in order to maintain their position. They would also turn over when placed on their back. The frogs had been operated on about a month

previously, and during all this time had never made one spontaneous (voluntary) movement; they had not, *e. g.*, attempted to leap out of the dish in which they had been sitting under a water tap. This showed that the removal of the cerebrum abolished voluntary movement, but that all the mechanism necessary for co-ordinated movements remained. These frogs were shown especially, because it would appear that certain changes in the nutrition of the animals had taken place leading to necrosis of the skin, etc., and ulceration. On one occasion, when the surroundings had been changed, one of the frogs had shown tonic spasm of the limbs. This reminded Dr. Mills of what Prof. Goltz had told him, when a worker in his laboratory in 1884, that many of the dogs whose cerebrum had been operated on died in convulsions weeks or months afterwards. The frogs in question had been in only fairly favorable surroundings and had been given a little food a few times, but food was of minor consequence to frogs in winter. A frog that had not been operated on, and kept under somewhat similar circumstances, was shown and seen to be in a very different state of health. Dr. Mills thought the operation had greatly lowered the vitality of the frogs and this was one of the chief lessons conveyed.

Dr. Wilkins was of the opinion that a portion of the cerebrum remained intact in these frogs, as they had made an attempt to get away, which action involved a series of movements, implying volitional power, and volitional power cannot exist with no portion of the cerebrum intact. In a frog with the entire cerebrum removed, on stroking the flanks a single croak is elicited, but the debilitated condition of these frogs may explain the absence of the sound. Dr. Mills had expressed a doubt about frogs swallowing each other, but the speaker thought that he was mistaken. He had more than once, in his own laboratory, upon opening frogs found bones in their stomachs, and on one occasion he had positive evidence that frogs do eat each other, for on hearing a splash and a croak he hurried to where the frogs were kept, and found one frog with the hind legs of another sticking out of his mouth, and which he immediately removed. He thanked Dr. Mills for his demonstration, and hoped that he would bring similar cases before the Society in future.

Dr. Adami referring to the length of time that the frogs had lived, quoted a Russian observer who kept a pigeon alive a whole winter after the removal of the cerebrum. He further suggested that as an explanation of the double movements spoken of by Dr. Wilkins that the severity of the stimulus was sufficient to account for it.

Dr. Mills in reply, thought that Dr. Wilkins was confounding the actions of frogs with the cord only remaining with those, as in the present case, with cord and medulla. Whether it would turn out that these frogs had the whole cerebrum removed or not, he had certainly seen cases, in which the whole cerebrum had been removed, act in a manner similar to these.

Complete Double Ureter.—Dr. Adami read the report of the case and showed the specimen.

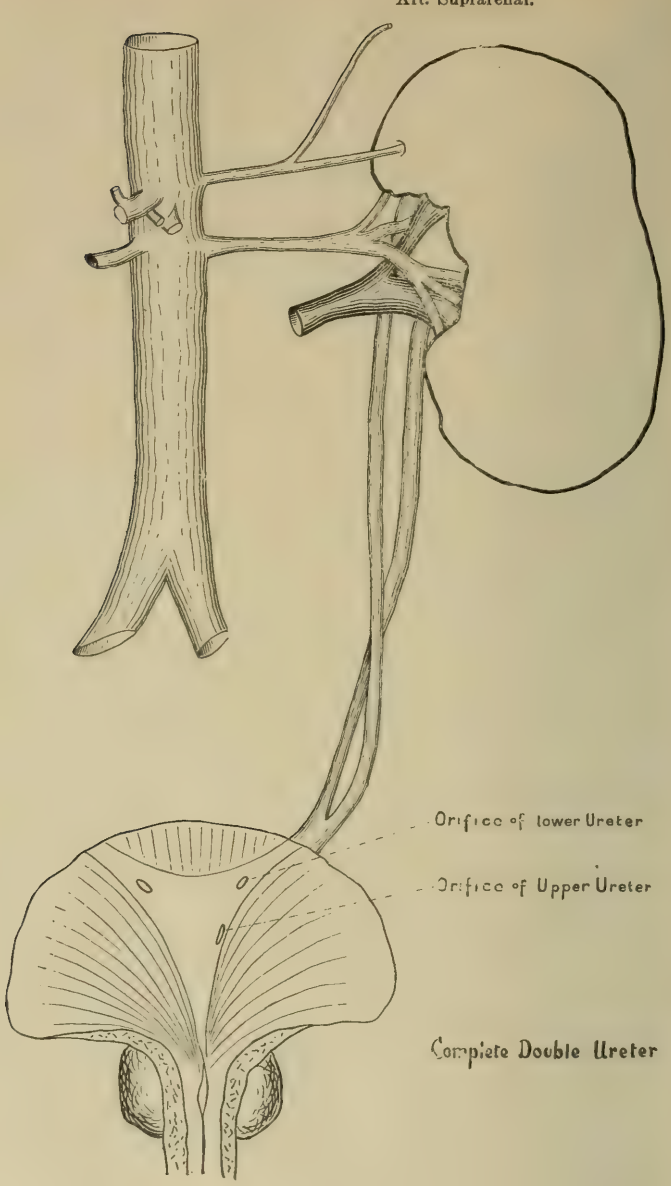
Although the condition of multiple ureters is one of comparatively frequent occurrence, it would seem that in nearly all the cases recorded of this abnormality fusion of the ureters, forming a single canal, had taken place before perforation of the bladder wall. The entrance into the bladder of accessory ureters by separate openings, is a condition which authorities on the subject are unanimous in regarding as extremely rare.[1] Gangolphe[2] states that in his search of medical literature, he was able to find only two examples. His search must have been incomplete, for we have met with about a dozen recorded cases in all—sufficiently few, however, to merit that the two cases in hand be described.

Of these one was discovered in a recent autopsy at the Royal Victoria Hospital on the body of a man aged 65. The right kidney in this case was normal; the left exhibited more than one abnormality. There were two renal arteries. The upper of small size, was given off from the side of the aorta just above the level of the cœliac axis. This passed into the substance of the cortex[3] of the upper part of the kidney upon its anterior and upper surface, and half way along its course gave off the left suprarenal artery. The main renal artery left the aorta at its normal point of origin, and divided into

[1] Klebs *Path. Anat.* ii, page 678 (1876); Rokitansky *Path. Anat.* Syd. Soc. ii, p. 211; Foerster *Path. Anat.* p. 523 (1865).

[2] Lyon Médicale, No. 26, 1883.

[3] An artery piercing the cortex is said to occur in 1 in 7 bodies examined.



Complete Double Ureter

three branches, of which the lowest passed in front of the renal vein, and sub-divided into three branches.

The kidney presented two pelves. The ureter of the upper one, which was the smaller, passed down behind the vessels, and crossed in front of the inferior ureter. Half an inch before reaching the bladder wall the ureters became fused externally, but at the same time the canals remained distinct. It was not possible to pass a pin probe from one to the other, nor could fluid injected into one ureter be found to pass into the other under any conditions. The ureter given off from the lower pelvis may be considered as the main duct, inasmuch as it was slightly larger, while its opening into the bladder was in the usual position, and corresponded to that of the single ureter of the right side. The superior and accessory ureter opened into the bladder by means of a small, but distinct, slit-like aperture, situated half an inch below, and to the inner side of the main orifice, in the line between that and the urethral orifice.

The second case is a specimen obtained from a female body by Dr. Shepherd, of McGill University. This has, for many years, been in the Museum of the Medical college, and has never been recorded.

With the exception that the kidney here presents a more clearly lobulated appearance, and that there is no arterial abnormality, the case is almost identical with the preceding. The reduplication occurs only on the left side, there are two pelves, the upper being the smaller, the superior ureter crosses in front of the inferior, and its separate orifice is also along the edge of the Trigone, in front, and to the inner side of the main orifice, between that and the urethra.

It is a curious fact that in nearly all the recorded cases of this peculiarity it has occurred in the *left* side. The two cases just mentioned are on the left side; Tangl's[1] celebrated case, and Gangolphe's[2] likewise occurred on this side. Baum[3] has lately published a case in which it occurred on the right side. There may be no special significance to be attached to this *left*-sided tendency, but still it appears to obtain.

---

[1] Virchow's *Archiv.* 118 (1889) p. 414.
[2] Loc. cit.
[3] Archiv. of Gynœkol. 42, p. 339 (1892).

Dr. Shepherd had met with a great many cases of abnormal blood supply of the kidney, and partial double ureter, but the only other case that he had seen of complete reduplication was the one taken by Dr. Adami from the museum to compare with the case reported.

Mitral and Tricuspid Stenosis.—Dr. Finley exhibited a heart in which both mitral and tricuspid stenosis was well marked. The orifice of the mitral valve admitted the tip of the little finger, that of the tricuspid the first finger. The changes in the left ventricle were not marked; if anything, its cavity was somewhat smaller and its walls thin; the right ventricle, while its walls were slightly thickened and its cavity dilated, did not present that extreme degree of enlargement commonly found in mitral stenosis; the right auricle was the largest of all the cardiac cavities. The lungs presented numerous reddish patches, which on microscopical examination proved to be hæmorrhagic infarcts.

The following is the history of the case:—The patient, a female, æt. 33 was admitted to the Montreal General Hospital in November, 1893, for pain in the side and cough. She had suffered from repeated attacks of sore throat, sometimes going on to suppuration, but had never had rheumatism or chorea. Dyspnœa on exertion had been present for three months before her admission. She had never had hæmoptysis. The family history presented no feature of importance, and there were no rheumatic tendencies. The present illness began four days previous to admission with a slight chill, cough and pain in the right side.

Physical Examination.—Moderate emaciation, slight cyanosis of lips and cheeks, with stellate venules on face. Temperature sub-normal. Cardiac impulse forcible and somewhat heaving over lower sternal region. Apex in fifth space $\frac{1}{4}$ inch inside nipple. Marked presystolic thrill at the apex. Cardiac dulness normal. A harsh rumbling presystolic murmur is heard, but to inner side of the apex, and localized over a space two inches in diameter. The first sound is abrupt, greatly accentuated and snapping in character. A soft systolic murmur is heard between the lower sternal area and the nipple. The pulmonary second sound is enormously accentuated and reduplicated. Below the angle of the scapula on the right side dulness,

feeble breathing, with diminished vocal resonance and fremitus. A small quantity of clear serum was drawn off a few days later with a hypodermic syringe. The first sound at the tricuspid area is feeble. The pulse 102, small, regular and of low tension. The other organs are normal, and the urine reddish yellow in colour, s.g. 1025, no albumen or casts. Ordered digitalis ℥.x ter in die.

Nov. 14.—Fluid in pleura reaches fourth rib in front. Temperature 99 to 100 in the morning and about 100 at night, became normal at this date. Digitalis dropped on account of vomiting.

Feby. 15.—The presystolic murmur and thrill disappeared and ten days later pulse became extremely weak, paroxysmal attacks of intense dyspnœa and cyanosis came on, death resulting apparently from cardiac failure. The urine averaged 20 to 30 ozs. daily whilst under observation. There was at no time any œdema of the extremities or serous sacs.

The physical signs left no doubt that the mitral valve was narrowed, but there was, during life, no evidence made out indicating disease of the tricuspid. On looking back, however, on the case, he was inclined to think that the systolic murmur heard in the lower sternal area was possibly a tricuspid sound.

It was impossible to find the onset of the disease—there was no history of rheumatism—but judging from the condition of the cardiac orifices it must have been of a good many years standing, and the case furnishes another instance of the extreme degree to which cardiac disease may advance and yet compensation be maintained A point of interest in connection with the first sound of the heart in mitral stenosis is the cause of its peculiar snapping character. It is, perhaps, difficult to give any satisfactory explanation. The point has been much debated, and many authors think that the thickened condition of the valve, in itself, would preclude the possibility of its emitting such a sound. Recently a paper has been published by Fenwick and Overend in Am. Jour. Med. Sc., 1893, stating that the peculiarity of the first sound of the heart occurring in mitral stenosis is really due to the closure of the tricuspid valve in the hypertrophoid right ventricle. The present case, however, certainly negatives such a view as the tricuspid valves were rigid, and yet the first sound was as

sharp, snapping and loud as in cases of uncomplicated mitral stenosis.

Dr. Martin had examined the lungs and found a rather curious condition resembling somewhat broncho-pneumonia, but sections proved the condition to be only hæmorrhagic infarction, with slight desquamation of the epithelium.

Dr. Lafleur remarked that the specimen was of interest, as all records show tricuspid stenosis to be a rare lesion. With reference to Dr. Finley's suggestion as to the possibility of there being regurgitation through the tricuspid valve—if such had been the case there must have been pulsation of the veins; he asked if such a condition had been noticed. With regard to the situation of a systolic murmur as indicating tricuspid disease it is not of diagnostic value.

Dr. Finley replied that there was very slight pulsation of the veins which seemed to come from below, but certainly was not a very marked condition—but as there are so many forms of pulsation of the vessels of neck, he did not lay much stress upon this condition.

Wound of the Heart.—Dr. Shepherd reported the case as follows :—In the summer of 1892 he was summoned to a case where it was said the patient, who had alcoholic mania, had pushed two needles into his heart. The patient when seen was lying on the floor and seemed in great distress, but calmly told the doctor that he had tried to kill himself by pushing needles into his heart. On examining the region of the heart with every beat the skin over the apex seemed to be pushed up by something beneath; this felt like a needle. An inch out from this another needle could be felt deep down in the intercostal space. The patient said that he had pushed both needles out of sight beneath the skin with a sharp end of a file. Dr. Shepherd made an incision over the needle in the apex of heart, and by pressing in a needle holder caught the end of the needle and pulled it out. The second needle was extracted with greater difficulty on account of its depth, both layers of intercostal muscle having to be cut before the needle was reached. The patient during the operation gave no evidence of pain. The needles were small darning needles, measuring a little over two inches in length. The patient

never suffered any trouble from the injury, and was as well next day as ever. The wounds both healed by first intention.

Dr. Mills spoke of the condition known as delirium cordis set up by wounding certain points in the heart and referred to the suggestion made by a writer in the *Medical News* some years ago, to make use of this procedure to restore the heart's action after chloroform syncope, but he thought that this step would be of doubtful value as the heart may or may not recover from this condition of delirium.

Dr. Lafleur recalled the specimen of a bullock's heart, exhibited by him four years ago, in which a large wire had forced its way from the stomach into the heart, penetrating the ventricle and auricle. There was evidence that this process had existed for some time, as the wire had worn a regular groove for itself in the ventricular muscle. Septic infection has been set up from the communication with the stomach.

Dr. Shepherd referred to a paper read by Dr. Praeger, before the Canada Medical Association, in which he mentions a case of chloroform syncope which was restored by sticking a needle into the heart.

Congenital Defects of the Anterior Pillars of Fauces.—Dr. H. D. Hamilton read the report as follows:—I have been furnished, through the courtesy of Dr. George W. Major, with this report of a somewhat rare malformation, which it is proposed should here be put on record. It is interesting as a curiosity and also because of the practical importance of diagnosing it from other affections.

J. C., member of the civic police, 25 years of age, a subject of laryngeal phthisis, was referred by Dr. Molson for local treatment on 8th Dec., 1890, to the Department for Diseases of Nose and Throat, Montreal General Hospital.

On examination, the anterior pillars of the fauces presented two longitudinal slits or fissures, the left being slightly the larger, and measuring half an inch in length, by about $\frac{3}{16}$ of an inch in width at the widest part. These openings were of a somewhat oval form extending down to the base of the tongue, and as the tonsils were deficient, the condition was very easy of observation. There was no evidence of cicatricial

tissue anywhere, the edges of the opening being smooth, and presenting the natural appearance of the surrounding parts.

In the *Archives of Otology* for January, 1892, Max Tœplitz, of New York, reports a case and states that the literature on the subject contains but six similar observations up to that date.

The cases so far recorded have been (1) by Walters in 1859.

(2). J. Solis Cohen, in the *Medical Record* of 1878, and also in the 2nd edition of his work on Diseases of the Throat, where the condition is explained as a separate investment of the fibres of the palato-glossus muscle.

(3.) Lefferts reports a case in the *Philadelphia Medical News* for 1882, besides communicating privately with Tœplitz regarding two unpublished cases in 1890.

(3.) Chiari reports a case in August, 1884. (Monatschrift fur Ohrenheilkund); (5.) Schapringer another in 1884; (6.) Clarborne another in the *American Journal of Medical Sciences* of 1888, one-sided. One-sided defects have also been noted by Schapringer and Tœplitz.

Dr. Birkett had seen a case referred to him by Dr. Buller where the congenital defects existed on one side only. There are a number of such cases on record, but as yet no explanation as to how they occur has been satisfactory.

Stated Meeting, March 23rd, 1894.

James Bell, M.D., President, in the Chair.

Dr. David B. Alexander was elected an ordinary member.

Talipes Equino-Varus.—Dr. Bell brought before the Society a man from whom he had removed the greater part of the tarsus for talipes equino-varus. The patient, a farmer, 47 years of age, had not suffered any great inconvenience up to seven years ago, being able to walk fairly well on the outer side of the dorsum of the foot. At that time a large bursa which had developed over the dorsum of the right foot became inflamed and suppurated. Since then sinuses had persisted and he had not been able to walk with any degree of comfort, and has been frequently under treatment. In January last he

came to the Montreal General Hospital for the purpose of having the bursa treated, but as in all probability the disease had extended down to the tarsal articulations, the more radical operation of tarsectomy was advised. After some hesitation he submitted to this operation for the correction of the deformity. At the operation, the astragalus was first removed, then the scaphoid, then a small portion of the head of the os calcis, then the cuboid and finally to make the correction complete, the tip of the external malleolus and portion of three cuneiform bones were removed. Unfortunately a case of erysipelas had been operated upon on the same table half an hour before, and though every precaution had been taken to disinfect the surroundings, the patient contracted that disease. This prevented splints from being applied in the usual way, so that there is a little more turning in of the foot than usual, but the result is very satisfactory, almost perfect.

Talipes Varus.—Dr. Bell showed a young man, twenty-one years of age, upon whom he had operated for this condition. The patient had been for several years incapacitated for hard work, and lately had been unable to work at all. The left foot was very much worse than the right. Five weeks ago an osteotomy was performed above the ankle joint, turning in the foot and correcting the deformity. The object was to bring the centre of gravity down through the centre of the foot instead of through the inner border.

The difference between the two feet when seen from behind was very well marked.

This operation was introduced by Trendelenberg a few years ago, and has practically superseded all others for serious cases of flat foot, which for one reason or another cannot be treated by appliances. Trendelenberg had observed that in certain cases of Pott's fracture, when care had not been taken to correct the deformity at the time of the accident, a condition resembling flat-foot had resulted. These cases he treated by osteotomy, and subsequently he extended the operation to cases of flat-foot.

Multiple Fracture of the Pelvis and Fracture of the Femur.—Drs. Kirkpatrick and Williams presented a mounted specimen which consisted of the pelvis, the last lumbar vertebra and the upper half of the left femur. In the sacrum

a fracture extended from the right ala at the auricular surface, which shows numerous splintered fragments, through the five right foramena to the transverse process of the first coccygeal vertebra. On the left side the bone showed many small splinters and incomplete fissures, especially on the anterior surface, extending in the same manner as far as the fourth lateral foramen. The left inferior articular process of the last lumbar vertebra is also fractured. On both sides the superior rami of the pubis showed transverse comminuted fractures. At the junction of the rami of the pubis and ischium on the right side and through the ramus of the ischium on the left are transverse fractures. The left inferior ramus of the pubis also shows an incomplete transverse fissure on its anterior surface. The left femur sustained a transverse comminuted fracture at about the centre of the shaft.

The man from whom the specimen was obtained was employed in excavating earth, when a large mass (400 lbs.) of frozen earth and shale fell on his side and thigh, crushing him to the ground. Four men lifted the mass and carried him to a bench. He was conscious, and after recovering from the primary shock was able to sit up; he said that his left leg was broken. Death occurred two hours later from shock or nervous injury, not from hæmorrhage.

Stated Meeting, April 6th, 1894.

James Bell, M.D., President, in the Chair.

Compound Depressed Fracture of the Occipital Bone.—Dr. Bell exhibited a boy, aged six, who in August last had fallen into an excavation and had sustained a compound depressed fracture of the left occipital bone. He was seen a few minutes after the accident by Dr. Grant Stewart, who observing that he was rapidly falling into a condition of coma sent for Dr. Bell, who had him taken to the Montreal General Hospital, where he operated. After shaving the head he proceeded to elevate the depressed portions of the bone, the edges being chiselled away, so as to make an elliptical opening, half an inch in the short and one inch in the long diameter. The dura mater was torn and a large clot (about four ounces) was

found lying upon the brain, but no active bleeding was discovered. Up to this time no anæsthetic had been given, but it was found necessary to administer chloroform to finish the operation. The boy made an uninterrupted recovery and was discharged about six weeks after. Since his return home his mother has noticed deafness in the left ear, some uncertainty about his gait, and incontinence of urine during sleep which condition did not exist before the accident. No examination of the ears had been made.

Penetrating Bullet Wound of the Brain in the Left Frontal Region.—Dr. Bell also exhibited a little girl, aged 5 years, who, while playing, had become possessed of a loaded twenty-two calibre English revolver, which she had accidentally discharged while resisting the attempts of an elder sister to take it from her. Dr. Hutchinson saw her shortly afterwards and sent her soon after to the Montreal General Hospital, where she was given chloroform and the wound exposed. The bullet had penetrated the left frontal region, three-quarters of an inch to the left of the middle line and the same distance above the supra-orbital ridge, going completely through the skull, causing a circular depressed fracture of about a quarter of an inch in diameter. The outer fragments of the bone were removed by forceps and the wound enlarged with a chisel. Forceps were then passed in carefully along the track of the bullet, and several spicules of bone removed from a depth of two inches in the brain substance. Blood clot, pieces of broken down brain matter and fresh blood were also removed, when on passing the forceps in, the bullet could be distinctly felt at a distance of two and a half inches from the surface; several attempts were made to grasp it, but failed, and considering the region in which it lay, near the anterior cornua of the ventricle, Dr. Bell concluded that the risks involved in persevering in attempts to extract it were two great; therefore, after carefully cleansing the wound, a glass drain was inserted directly into the brain substance and kept in for seventeen days, being shortened on two different occasions. For the first four days the temperature oscillated between 99° and 100°, but afterwards remained normal. The child made an uneventful recovery and was discharged on Feb. 26. From the time she left the Hospital she has been absolutely well

and is now going to school. Dr. Bell recalled a similar case which he had reported to the Society in the session of 1879-1880, of a man who deliberately shot himself in the temple and from which the bullet had never been removed. This patient died of phthisis two years later, and at the autopsy the bullet was found lying within half an inch of the falx cerebri.

Dr. Proudfoot, having made a cursory examination of the boy, found that the watch placed against the child's ear could be heard distinctly, whereas if it was removed the slightest distance, the sounds could not be heard at all. Whether this was due to conduction through the bones he could not say, but apparently the nervous portion of the ear was all right. He suggested that the difficulty in hearing might be accounted for by a catarrhal condition of the middle ear brought on by wet dressings, and which would disappear on treatment.

Dr. Hutchinson had seen the second case, the girl, half an hour after the accident had occurred. The child did not show any symptoms of brain injury. He put her under chloroform, examined the wound, and having found that the bullet had entered the brain, concluded to send her to the Hospital. He saw her again after her return from the Hospital, and the mother now states that she is even more precocious than before the accident.

Case of Multiple Abscess of the Brain Associated with Pulmonary Disease—Drs. Adami and Finley reported the following case:

T. W., aet. 61 years, by occupation a painter, became ill upon February 23rd, suffering from a severe cold, which made him take to his bed. He left his bed the next day but was forced to return, the cold having increased in severity, there being a pronounced cough with expectoration and frontal headache. This was followed by pain in the chest, high fever and the expectoration of blood-stained sputum. When he was admitted into the General Hospital upon March 9th, these symptoms had disappeared, and nothing was to be detected in the chest save a few crepitant râles at the base. There was, however, great feebleness, with obstinate constipation. The right pupil was larger than the left, without there being any disease of the fundus. There was no evidence of renal disease. The patient became gradually comatose with coma vigil.

The pulse continued unaltered at 84, the respirations were 28 per minute, only increasing at the last moment, the temperature was 100°. The patient died six days after admission.

At the autopsy performed fifteen hours after death, the trachea was found greatly congested with thin blood-stained mucus covering its surface. The bronchi were reddened and affected with bronchitis, the upper lobes of both lung were œdematous, the lower lobes of both lungs were heavy to the feel and fairly firm, they were greatly congested but at the same time crepitant. At the root of the right lung was a suppurating bronchial gland.

In the heart the one point deserving notice was the condition of the coronary arteries; these, while not definitely atheromatous, were greatly dilated, their walls having undergone fibroid thickening. There were small patches of fatty change in the first part of the aorta, with more distinct atheroma in the lower dorsal and abdominal aorta.

In the alimentary tract the only markedly abnormal condition was the presence of a suppurative tonsillitis. The liver was somewhat fatty, the pancreas firm and fibroid, with dilated and tortuous artery, the spleen small and fibroid with wrinkled capsule, the kidneys large and long with diminished antero-posterior diameter, distended arteries, finely granular surface, lessened cortex, and with a small cyst upon the surface of the right organ. Beyond these conditions, nothing noticeable was observed. Save for the suppurative tonsillitis and the state of the lungs, the condition of the organs was what is expected to be found associated with the arterio-sclerosis of advancing age.

Coming now to the brain it was noticed that upon removal of a skull cap of abnormal thickness, the left hemisphere seemed to bulge more than the right, and the convolutions were more flattened. Upon removal of the organ the vessels at the base were found markedly atheromatous, even to the end of the fissure of Sylvius. Around the roots of the anterior cranial nerves there was a purulent meningitis extending in front to the olfactory bulbs, behind it reached as far back as the line joining the points of egress of the 5th nerves.

Upon opening the lateral ventricle of the left side, it was found to contain a large quantity of fairly clear or semi-trans-

parent greenish muco-pus; in the region of the posterior cornu this extended for several centimetres outwards into the white matter of the brain, forming a channel with smooth walls; this did not extend into the grey matter. The choroid plexus was thickened and œdematous. In the substance of the left hemisphere, opposite to the junction of the temporal and parietal lobes there was a large cavity in the white matter, containing pus of a like clear mucoid greenish character. Its walls were of reddish-blue colour and were necrotic. The right ventricle contained a large cast of whitish green pus extending over the whole of the mid-region of the ventricle. In the white substance opposite to the ascending frontal convolutions, and upon the level of the junction of the upper and middle frontal lobes was another abscess the size of a hazel nut; this extended quite superficially into the gray matter, less than 1 cm. of wall remaining. It contained similar greenish contents, and had walls undergoing necrosis. There was further a small abscess containing but a few drops of pus in the posterior portion of the right optic thalamus. The pus present in the left ventricle extended down into the third and fourth ventricles. On cutting into the cerebellum the left lobe was found normal; the right lateral lobe was the seat of another abscess, with well-defined walls, filled with necrotic material, associated with the same pale greenish pus; this was 5 cm. in the greatest diameter and about 3 cm. wide, being of oval shape. The pons and medulla were normal.

A few encapsuled diploccoci were found in the greenish pus of the cerebral abscesses.

We have recorded this case mainly because of its bearing upon the relationship between lung disease and cerebral abscess. That such relationship frequently exists has long been recognized. Only last year one of us (F.) had a case under observation, presenting many points of similiarity with the present, and while we were engaged upon studying the material obtained from this case, our mutual friend, Dr. Williamson, of Manchester, published a short article in the *Medical Chronicle*, bringing together the observations of several observers upon this very subject. Hence it is not inappropriate to call attention here to this case.

Williamson's epitome of the literature of the subject shows that more frequently cerebral abscess develops as an accompaniment of chronic lung trouble, rather than as a sequela of acute. More especially it is in cases of chronic bronchitis and bronchiectasis that the relationship is found. There are, however, several cases in which the abscess formation has followed upon acute pneumonia. In the case mentioned by us the exact conditions which had led to the abscess formation cannot be stated with absolute certainty, although it is safe to infer from the history given that the patient had suffered from croupous pneumonia, and, from the condition of the lung both macro- and microscopically, that this disease had affected the lower lobes on either side. The presence of lanceolate diplococci in the characteristic greenish pus may be urged with some force in favour of this contention. On admission into hospital the condition was one of advanced resolution of the disease, the only active disturbance found at the autopsy being the suppurating gland at the root of the right lung. The presence of this condition of the gland is in itself suggestive of a tendency on the part of the inflammation that had affected the lungs to travel beyond those organs.

It is difficult to offer a satisfactory explanation, or one that will embrace all cases why there should exist this liability for cerebral abscesses to be associated with disease of the lungs more frequently than, for instance, renal abscesses are found to be thus associated. In our case, it is true, there was extensive atheroma of the cerebral vessels, and the diseased condition of the arteries may have been a predisposing cause; such atheroma, however, is not constantly present.

Remarks.—Dr. James Stewart remarked that although there were plenty of opportunities for examining the case, a diagnosis during life had not been reached. The symptoms were not at all characterized, being simply those of an acute brain lesion causing pressure. He thought Dr. Adami's explanation was the correct one. Articles have lately appeared in the British journals pointing out the frequency with which acute central lesions and acute peritonitis were brought about by this organism. At the present time in the Victoria Hospital there is an instance of a suppurating arthritis follow-

ing pneumonia, and in which the pneumococcus has been found in the joint.

Dr. Gunn had first seen the case referred to by Dr. Stewart in the outdoor department of the Victoria Hospital, and found an area of dulness over the middle of the right lung in front, rather small in proportion to the attendant temperature, which remained in the region of 104° for first 3 days. After entry to Hospital a well marked crisis had occurred and temperature remained normal for three days, when he developed a violent chill and showed all the signs of some acute infection or relapse. The following day a swelling developed in the cellular tissue of the left upper arm behind, showing a characteristic erysipelatous appearance, which subsided gradually, and 4 days after all fever had gone, there was another chill and rise of temperature. This time the knee joint on the right side and the left shoulder became very painful, tender and swollen, and on examining the contents a characteristic pus, not decidedly green, but rather of a milky nature, was found. The microscope showed nothing but diplococci with the capsules well marked. Bouillon cultures, however, did not show characteristic diplococcus growth, but rather that of a streptococcus. The examination is not complete—no inoculation having been made.

Dr. Gunn asked if in Dr. Adami's case any other micro-organisms were found and if inoculation had been made.

Dr. Mills wished to know whether the arteries of the brain in Dr. Adami's case had been examined, and whether steps were taken to exclude emboli or ordinary forms of brain softening in the diagnosis.

Dr. Adami stated that abscess of brain with general signs of inflammation in the surrounding tissues were not caused by simple emboli alone.

Gall Stone.—Dr. Bell exhibited a specimen which, though only an ordinary gall stone, had a clinical history of especial interest. On Wednesday last he had been called into the country to operate on a patient supposed to be suffering from appendicitis. She was an unmarried woman, fifty years of age, and although a dyspeptic for many years, which she attributed to the loss of her teeth, she never had a day's real

illness in her life. On the previous Friday she began to suffer from pain about the right hypochondrium; her physician saw her on the following Monday and found her suffering from great pain on the right side of the abdomen. Slight vomiting, normal temperature, and pulse about one hundred. The vomiting persisted all that day and night. Next day vomiting had ceased and morphia was given for the pain, but towards evening of the following day, her temperature rising to 99.5°, her physician grew anxious, and upon making an examination found a resisting mass to the right of the umbilicus and extending up to within an inch of the lower ribs on the right side. Dr. Bell found an area of dulness and resistance extending along the right linea semilunaris upwards to a finger's breadth below the lower border of the ribs and downwards to an inch and a half below the umbilicus. Along the outer border of the mass at the so-called McBurney's point, there was special tenderness, although tenderness existed more or less all over the area of dulness. While concurring in the diagnosis of appendicitis, Dr. Bell felt that the symptoms might possibly be due to other causes such as suppurating gall-bladder or some extravasating condition about the stomach, and hesitated to operate in the country. The patient came to Montreal and entered the Royal Victoria Hospital, when on further examination he had almost made up his mind that the case was one of appendicitis. Upon opening the abdomen, however, he found a very much distended gall-bladder, very red and with friable walls. Upon making a puncture an ounce of clear fluid escaped, then turbid fluid and lymph, and finally, about an ounce of pus. The stone was found to be impacted in the orifice of the cystic duct, from whence it was dislodged with great difficulty.

This case, though one of ordinary gall-stone, simulating as it did so closely an appendicitis, is of more than passing interest to the surgeon who is now-a-days so often called upon to operate for appendicitis. The stone was an inch in length, three-quarters of an inch in breadth, and half an inch in thickness, being somewhat oval and slightly flattened, and has truncated extremities, one of which was directed into the cystic duct and the other into the cavity of the gall-bladder.

Stated Meeting, April 20th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Dr. Edward J. Kennedy was elected an ordinary member.

Angiosarcoma of the Lung.—Dr. JAMES STEWART brought before the Society a young man suffering from a morbid growth of the lung. (For full history see page 421.)

Melanotic Sarcoma of the Foot.—Dr. ARMSTRONG exhibited the specimen which had been removed from the sole of the foot of a woman aged 67. Five years ago she had stepped upon a nail which had pierced the sole. After it was removed the wound healed ; one year later it re-opened and discharged pus for some time and again healed. For the past four years it has periodically opened, discharged and again healed up, sometimes remaining closed for a month or two. During this time she had been doing the work of a servant and never had any medical attendance until a month ago, when she called upon him. Behind the middle and fourth toe there was a mass about one inch square which resembled an exuberant granulation. Under ether this mass was shelled out with a blunt spoon, it being connected with neither tendon nor periosteum. On examination a lymphatic gland, about the size of an egg was found below Poupart's ligament, the patient not being aware of its presence. The hæmorrhage after removal was considerable, one or two little vessels spouting.

Dr. Armstrong thought at the time that the condition was malignant, which suspicion was confirmed by Dr. Adami's report. Such cases are instructive, inasmuch as they show that irritation may sometimes set up a growth in situations where otherwise it would not be at all likely to occur or may change the character of a growth from a benign to a malignant type. This principle applies to the breast also, and should impress us with the importance of paying early attention to any leison which, by continued irritation, may develop into a malignant character in the later years of life.

Dr. ADAMI stated that the somewhat alveolar arrangement of the cells in portions of this tumour brings up a much debated question as to the nature of these melanotic sarcomas. Are they ordinary sarcomas, or a mixture of sarcoma and carcinoma or a very malignant form of pure sarcoma? Here, however,

the evidence is certainly in favour of a pure sarcomatous nature, the growth originating immediately beneath the malpighian layer of the epidermis. This tumour differs from many other melanotic tumours by being very well defined, and there being not much evidence of cell growth at its borders, a condition uncommon in primary melanotic growths It being very superficial may account for it not being attached to the deeper structures. It will be interesting to note if any secondary growth appears in the gland in the groin for often when the primary growth is of small size there is rapid increase in the secondary form.

A Case of Appendicitis.—Dr. Armstrong in exhibiting this specimen, stated that the clinical history was of more than usual interest. The patient, a lady, 46 years of age, a morphinomaniac, gave a history of eight attacks of pain in the lower part of the abdomen. In one of her attacks in November, 1893, she was five or six weeks in bed. Dr. Armstrong saw her for the first time two months ago, when on examination he found in the right side of the pelvis a fairly large mass, hard, painful and tender on pressure. On considering the history of repeated attacks, he advised early removal of the mass. While the patient had this still under consideration, she came and said that she had discharged about a pint of creamy yellow matter from the vagina, then on examination he found that the mass was almost all gone, and therefor came to the conclusion that it had emptied itself in that way. Two weeks ago she complained of abdominal tenderness, and he thinking that she had been taking morphine by mouth was inclined to account for it by the use of that drug. Her temperature, however, rose to 100°, and next day she began to go into a state of collapse. Subsequently the temperature dropped to 95½°, and then quite suddenly returned to normal with an accompanying improvement in the pulse. This latter favourable condition continued for some days, until one morning, when on going to the hospital he found her with a low temperature, small weak pulse, pain and extreme tenderness on pressure. Operation was at once performed. Thinking he had to deal with a tubo-ovarian abscess, he made a median incision, but on going down into the pelvis on the right side he soon reached pus. After work-

ing at what he thought was a tube he released it only to find that it was the plexure of the colon which lay to the right of the uterus, just above the Fallopian tube which, together with its ovary, was perfectly normal. The colon was filled with water, and found not to be perforated. Then examining the region of the caecum, the blunt and discased appendix was found. Such a condition in a woman is very misleading, pointing as it did more to a pus tube than to a purulent appendix, especially as her husband was not above suspicion.

Acute Leukæmia.—Dr. Stewart gave the clinical history. The patient, a man, 60 years of age, was admitted into the Royal Victoria Hospital in a condition of high fever and swelling of all the lymphatic glands. These were his chief symptoms during the three weeks prior to his death. There was enlargement of liver and spleen, marked leucocytosis, white to red, varying 1-30 to 1-50. Diagnosis was acute leukæmia, but in this connection it was difficult to explain the high pyrexia, that of leukæmia being very moderate. The patient died from exhaustion, his condition being quite uninfluenced by treatment.

Dr. Adami gave the pathological report. The microscopical examination of the liver showed increased amount of fibrous tissue between individual cells pointing to some chronic disturbance. Sections of the pancreas also showed more fibroid tissue than normal. Cultures from the spleen upon agar-agar and beef broth showed the characteristic development of the streptococcus of suppuration. Dr. Adami stated that at the time of the autopsy he had a slight scratch upon his finger, at the site of which small pustules subsequently developed, from these he had made cultures and found very characteristic streptococcus growth. This led to a more thorough examination of all the organs and enormous numbers of streptococci were found throughout. Emboli formed of the streptococci were found in the marrow of the sternum, in the spleen pulp, filling up the capillaries between the liver cells, in many places in the kidney, in the lymphatic gland, especially those softened glands of the mesentary about the pancreas. They all stained by gramms method like the ordinary streptococci and the cultural peculiarities resembled them also. They,

however, differed slightly from the ordinary streptococcus of erysipelas and suppuration by growing more freely, the broth in which they grew not being quite so clear as usual, and the size of the chain was rather longer. The inoculation experiments are as yet incomplete.

Dr. Bell asked for some information as to the man's occupation prior to his illness, for it seemed to him from the clinical and pathological report that the case was one of septic infection.

Dr. Geo. Brown wished to know whether any ear symptoms were present. The case recalled to his mind one reported in the General Hospital several years ago, in which the only symptom was a septic temperature, and in which a diagnosis of suppurative endocarditis was made. The autopsy, however, revealed suppuration in the lateral sinus.

Dr. Gunn saw the patient when he first came to the hospital and learned from him that he had been working recently cleaning out the sewers. Another important feature in the case was the nature of the leucocytosis. The increase of the white corpuscles finally reached the proportion of 1 in 37, and consisted solely of an increase of the polynuclear leucocytes, the mononuclear variety not being at all increased. This condition of the blood corresponds with septicæmia. Another very interesting point in the case was the peculiarity of the splenic enlargement, which instead of enlarging downwards extended upwards, its area of dulness reaching behind to the middle of the scapula, and being continuous in front with the heart dulness. At the autopsy this condition was explained by the contraction of the left lung, which accordingly permitted the upward extension of the spleen, as being the direction of least resistance.

Typhoid Fever with Double Pneumonia.—Dr. Geo. A. Brown reported the case. D. O., age 30, complained of headaches, pain in the back and bones, dyspnœa and cough with expectoration of a rusty character. Family history negative. Patient had scarlet fever and measles in childhood and la grippe four years ago and since that time has enjoyed good health.

Present illness began about ten days ago (Sept. 25), with chilliness, headache, pain in the back and bones, and slight

pain in the abdomen, followed by diarrhœa. About Oct. 1st, he had a slight hacking cough, with expectoration of a frothy character. Thinking that it was only a cold, he tried to battle it off and remained at work until he was compelled to give it up. On Oct. 4th, I saw patient for the first time. He was in a semi-comatose condition and there was marked signs of prostration. Temp., was 105°; Pulse 120; Resp., 40; pupils were contracted and responded to light. I found it very difficult to wake him and when awake he had difficulty in hearing, and did not understand questions very well.

On examination of the lungs I found sibilant râles all over with rapid and prolonged respiration. At the back in the right inferior scapular region there was dulness, blowing breathing and bronchophony, also some physical signs in inferior auxillary region, showing extensive consolidation of the right lower lobe. On left side in left inferior scapular region there was another patch of pneumonia about two inches square.

The abdomen was covered with rose spots. On palpation it was tense, there was tenderness and gurgling in right iliac fossa, spleen was enlarged; dulness extended from eighth rib almost to the crest of the ilium. Urine normal.

For first seven days (Oct. 5th to 12th) of his illness, patient remained in a prostrated condition. There was present a low muttering delirium, picking of the bed clothes and subsultus tendinum. On eleventh and twelvth of October patient was in a semi-comatose condition all the time and could not be aroused when nourishment was given him. There was a cyanotic condition of the lips and finger tips. Urine was examined and no albumen found. Oct. 13th, the delirium ceased, the temperature and pulse dropped and there was profuse sweating. In the pneumonic areas there was a few redux râles.

From Oct. 14th to 21st the physical signs resembled acute miliary tuberculosis, as there were numerous moist râles all over the lungs, more especially in pneumonic portions. There was a hectic flush and profuse sweating towards evening, usually lasting about two hours. There was also frequent coughing, at times followed by muco-purulent expectoration. About Oct. 22nd, physical signs in lungs cleared up; cough ceased and there was also a few mucous râles in the bases.

The abdominal symptoms at the time were more marked, there was distention and the stools were very fœtid.

On Oct. 28th, temp. dropped to normal and patient made a good convalesence. Treatment was milk diet, brandy ℥ vi, and Trit. Strychininæ Sulp. gr. $\frac{1}{30}$, 4 g.h., and Trit. Hydrarg. Subchlor. gr. $\frac{1}{10}$ 2 g.h., while the stools were fœtid.

The causation of Inflammation of the Brain—A comparison of authorities on the subject.—Dr. Wesley Mills read the following communication:

Owing to some remarks made at a recent meeting of the Society in regard to the relations between the blood vessels and inflammation of the brain I have been led to look into the literature of the subject and now submit the following brief references from writers in English.

Fagge in his Principles and Practice of Medicine says: "Now it is well known that an embolism often sets up inflammatory processes in the parts around the vessel in which it becomes lodged."

Bristowe observes in his Theory and Practice of Medicine: "In a large number of cases encephalitis arises from the influence of some irritating mass as a patch of softening."

"Inflammatory changes occur about the softened areas and when the embolus is derived from an infected focus as in ulcerative endocarditis, there may be suppuration. According to Flint: "If the embolus is infectious it leads to the formation of an abscess."

Ross (Handbook of Diseases of the Nervous System), believes that, "local disease of the brain like thrombosis, embolism, etc., often sets up surrounding inflammation of the brain."

Bartholow (Practice of Medicine), remarks that, "more frequently encephalitis has occurred from infective thrombi."

Osler (Practice of Medicine) writing of thrombosis and embolism holds that "inflammatory changes are common in and about the softened [brain] areas. When the embolus is derived from an infected focus, as in ulcerative endocarditis suppuration may follow."

One of the principles I learned as a student from that great

teacher of Medicine, the late Dr. R. P. Howard, was, that in any case of fatal brain disease it was a wise precaution to examine the blood vessels of the brain, and, in fact, to look into the circulatory system generally, especially so in cases of softening, inflammation, etc.

From such an examination of the writings of the leading teachers of Medicine of the present and the immediate past as I have been able to make, it appears that such an advice is still sound. While we should welcome any new light that microbic or other processes may throw on disease, I cannot but believe that the old landmarks have not yet all been swept away.

In a few words the truth in regard to inflammation and suppuration of the brain, seems to be thus: While an inflammation of the brain may arise and go on to suppuration without the blood vessels being especially concerned in a causative way, and while a thrombus or an embolus may not give rise to inflammation, yet on the other hand inflammation and suppuration may follow sooner or later and is almost sure to do so if the thrombus or embolus be due to some infective process near or remote. It follows therefore that the examination of the blood vessels of the brain, both venous and arterial, is a sound procedure in all cases of gross brain lesion.

Dr. Adami remarked that he presumed the paper was intended, by Dr. Mills, as an answer to his (Dr. Adami's) statement at the last meeting, that emboli never caused suppuration. He, at the time, understood Dr. Mills to mean that suppurative inflammation of the brain, might be due to an infarct in that organ, that is to say, to the simple blocking of a vessel by some non-infective material. This he regarded, and still regards as impossible. To have suppuration and the formation of an abscess (as there was in the case then being discussed), one must have the presence of a micro-organism. Every metastatic abscess is the result of the carrying to and the blocking of some vessel by micro-organisms, which cause a destruction of tissue, etc., at that point. A simple infarct on the other hand, causes necrosis, and round about the necrosed area, one may get a zone of simple inflammation, but never the formation of pus. The authorities quoted by Dr. Mills, in

his paper, may be divided into two classes. (I). Those who are referring to simple inflammation (II). Those who are referring to supperative inflammation, and it will be found that they both agree pretty closely with the foregoing views. He pointed out that in giving his description of the brain, he had referred to the atheromatous condition of the vessels.

Dr. Mills admitted that his paper was intended as an answer to Dr. Adami's treatment of his comments on a case discussed at the last meeting. In asking the question that night, he simply wished to know whether the blood vessels of the brain had been examined, as while he did not wish to belittle the importance of the more recent methods of bacteriological research, yet he thought it inadvisable to desert entirely the good old landmarks of pathological investigation. and as such he regarded the condition of the vessels as something never to be overlooked.

The late Dr. Joseph Workman.—Dr. Girdwood called the attention of the members to the death of Dr. Joseph Workman, of Toronto, who was an Honorary Member of the Society, the oldest living graduate of McGill University, and was connected by marriage with one of our present most prominent members. He moved—"Resolved, that the members of this Society have heard with deep regret of the death of Dr. Joseph Workman, of Toronto, who was an Honorary Member of the Society, and that they desire to express their high esteem for the late Dr. Workman and their sympathy with the family of their deceased friend and fellow worker; and that a copy of this resolution be forwarded to the representatives of the family."

Dr. Wesley Mills, although regretting the occasion, had great pleasure in seconding the resolution. He knew Dr. Workman, he had felt the influence of his presence for good, and knew a number of men who had experienced the same. Dr. Workman, in fact, was one of those men who influenced profoundly almost every person with whom they come in contact. He had made some important contributions to our Society, and was for many years a translator of scientific Italian medical work which if he had not translated, would most likely have remained entirely unknown to the majority of the profession in Canada. In this respect he even went to the trouble

of translating an important Italian work on the brain for which he never got a publisher. He was in many ways an extraordinary man, a man with the courage of his convictions. For many years in Ontario he fought the battles of the profession through the press, and we to-day are reaping the fruit of the victories won by this great Nestor over the iniquities of his time. Dr. Mills expressed it as his conviction that, with the exception of the late Dr. Howard, perhaps there was no man in Canada who was so generally respected and admired by his professional brethren, and, indeed, by all who knew him intimately enough to appreciate the nobility of his nature, as was Dr. Workman.

Stated Meeting, May 4th, 1894.

James Bell, M.D., President, in the Chair.

Foreign Body in the Bronchus.—Dr. Bell exhibited a short piece of lead-pencil, with a brass top, out of which the rubber had fallen, that he had recently removed from the lower division of the left bronchus of a child. A week ago last Thursday a little girl eight years of age, while nibbling the end of her lead pencil, was struck on the back of the head by a schoolmate; the pencil slipped from her fingers into her mouth, and being a nervous child, she jumped up, inspired, and drew it into her larnyx. A fit of strangulation followed, lasting about fifteen minutes, and nearly proved fatal. A doctor was immediately called in; she recovered sufficiently to walk home, but coughed violently throughout the night. Her family doctor saw her at ten o'clock that night, but as she was then sleeping, he made no examination. The next morning, on calling, he found the left side of her chest collapsed and dull, with no evidence of air entering the lower lobe, and very little the upper lobe of that lung. The cough then had almost ceased, but she complained of great pain, which she vaguely referred to the region of the nipple. Her temperature rose during the day, and in the afternoon had reached as high as 103.5°. She was brought to Montreal that day and when Dr. Bell saw her in the evening, at the Royal Victoria Hospital, her temperature was 104°, respiration 50 to 60 per minute, pulse 140; she was very restless and complained of great pain

in the situation already mentioned. The collapse of the left side was so marked, as to be visible to the naked eye, and auscultation revealed, that absolutely no air was entering the lower lobe, while in the upper, only a very feeble sound without any vesicular murmur, could be heard. His conclusions were, that the piece of pencil had entered the left bronchus, into the lower division of which, it had become impacted so as to completely occlude it, while its end, lying across the orifice of the upper division, partially blocked its lumen as well; that in this position it acted as a bullet valve, which when she coughed permitted the residual air to be expelled, but which upon inspiration, became firmly impacted and prevented the entrance of air to the lower lobe, and allowed very little to the upper. Recognizing the condition as a serious one, Dr. Bell thought it better to postpone the operation until the morning, by which time he could have the assistance of Drs. Stewart and Roddick in consultation. With their concurrence, the next day (Saturday), a low tracheotomy was performed, and the trachea opened below the isthmus of the thyroid. Before attempting the extraction of the foreign body the child was placed in what might be described as an exaggerated Trendelenberg's position, with a pillow beneath the back of the neck, to throw the head back; so that if he succeeded in dislodging the foreign body gravitation would cause it to fall downward towards the wound in the trachea, and thus prevent it from being drawn into the other bronchus. To reach it, an angular forceps, with blades 3½ inches long, and the angle nearly ninety degrees, were used, the angle of which went completely into the wound, and thus permitted the blades to be manipulated with great ease. Having succeeded in grasping it with the forceps, he had disloged it from its impacted position with a little jerk, but then fearing he might have been mistaken, and have caught hold of a ring of the bronchus instead, he let go the object, for the purpose of satisfying himself further. Immediately, however, there was a gush of pus up through the tracheal wound, which threatened the patient with instant asphyxiation, but, fortunately not having withdrawn the forceps, he passed them down again, and striking the brass end of the pencil, which happened to be uppermost, he immediately withdrew it. All

symptoms of urgency disappeared at once. The next morning on examining the chest air was found entering both lungs freely, a few râles were found in the lower lobe of the left lung anteriorly; but since then these have disappeared, the child appears quite normal, and is only waiting for the closing of the tracheal wound to return to her home.

Dr. James Stewart, had the privilege of seeing the child before, during and after the operation, and felt honoured that he belonged to a profession capable of accomplishing such beneficent results. It was quite clear to any person who witnessed the great distress under which the little patient laboured, that she could have lived but a very few hours. An interesting feature was the change in the physical signs which the plugging gave rise to; percussion over the lower half of the left lung gave a note quite as flat as that met with in pleural effusion, while over the upper half though not so marked, it was still less resonant than normal: On listening over the lower half, nothing at all was heard, while in the upper portion one had tubular breathing. These phenomena are worthy of consideration as illustrating how respiratory sounds in health and disease are produced.

Six Cases of Pyosalpynx.—Dr. A. Lapthorn Smith, read the reports of the cases.

Case I. was a Mrs. M., 37 years of age, mother of four children, last child thirteen years of age. She had also a miscarriage eleven years ago. She began to menstruate at the age of seventeen and was married soon after. Her periods had always been profuse. It was learned from her family physician that her husband had given her gonorrhœa about the time of her miscarriage, since which she had never been a day well. She presented the dirty, bronzed complexion, characteristic of poisoning either by pus or fæces. It was ascertained that she had always been troubled with constipation, her bowels not being moved more than once in eight days unless she took medicine. She stated that she passed water fifty times a day. Since eleven years she has suffered constantly from pain in the sides and down the thighs, besides having had several attacks of pelvic peritonitis, the last one occurring six

months ago, from which she nearly died. On examination she was found to have a lacerated perineum, lacerated cervix, and a pair of large pus tubes adherent to the ovaries and both bound down in Douglas' cul-de-sac. Three operations at one sitting were strongly urged, but she would only consent to the cervix operation, promising to submit to abdominal section later if she did not improve after the repair of the cervix. Schroeder's operation was accordingly performed, the greatest possible care being taken not to disturb the diseased appendages. All went well until the twelfth day, when she was allowed to get up, but an hour afterwards she was taken with an acute attack of pelvic peritonitis. It was evident that the pus tubes were either leaking or that they had burst, and immediate laparatomy was decided upon, but before the family's consent could be obtained the abdomen had become so distended that it was thought impossible to return the bowels without opening them with the knife, if a section of the abdomen were made. It was, therefore, necessary to wait for three weeks until, with great difficulty, the peritonitis had been somewhat subdued and the vomiting was stopped. Finally a cœliotomy was done and a pair of distended tubes and ovaries were dug out from the many layers of densely organized adhesions Thick yellow pus poured from the cut ends after they were placed on the tray. The stumps at the uterine cornua were cleansed with a solution of bichloride of mercury, the abdomen was thoroughly flushed with hot water, and a drainage tube was inserted, but was only left in for twenty-four hours, being no longer required. The pain in the pelvis which she had suffered so many years disappeared after the operation, and the woman made such a good recovery that she was up in four weeks, walked down stairs in five weeks, and in six weeks was nursing her daughter, performing with alacrity the work which this entailed.

On examination, the tubes and ovaries of both sides were found to be glued together into one mass the size of a large hen's egg. When placed in water the fringe of torn adhe-

sions was clearly seen. No amount of dissection apparently would have been sufficient to separate the ovary from the tube without tearing the latter. A cross section of the tube near the uterine end showed that while the calibre of the canal was almost obliterated, the walls were very much thickened, the muscular layers being replaced by white fibrous tissue. The glandular and epithelial structures had been destroyed, while the meso-salpinx was very much thickened by the deposit of inflammatory exudation from the tube.

Case II. The next specimens were removed from a Mrs. A., 29 years of age, whose troubles date from a miscarriage which she had nine years ago, never having had any children. She had severe dysmenorrhœa ever since, so severe that ordinary doses of anodynes had no effect in relieving her. Bimanual examination revealed the uterus in normal position, but Douglas' cul de-sac was found to be filled with two round hard masses, very sensitive to the touch, which were thought to be the tubes and ovaries united together. As she was anxious to have children and declined to have the ovaries removed, palliative treatment was tried for several weeks with some benefit, but three months later she was worse than ever, and demanded a radical operation, which was performed on the 19th of April. The distended tubes, which were firmly cemented to the ovaries, were as large as hen's eggs, and required a long and forcible dissection with the fingers before they could be lifted to the surface. The abdomen was flushed and drained, and the woman made an uneventful recovery, getting up on the twenty-first day and going home on the 23rd of May.

She assured the operator, the day after the operation, that the pain she had had for nine years had entirely disappeared.

Case III. Mrs. M., 26 years of age, had been under the reader's care for several years for menorrhagia and dysmenorrhœa. Although married three years she had never been pregnant. She had to have morphine at every

period, other anodynes having failed to relieve her. At every second period even large doses of morphine proved ineffectual ; she was seen on several occasions when her suffering was certainly agonizing. Rapid dilatation was performed twice at intervals of three months with only temporary relief, but at the end of six months she was as bad as ever, so it was determined to remove the appendages, which was done at her home on the 22nd March, 1894. This case was remarkable for two things : the short convalescence, and the fact that one tube was completely sealed up while the other had a beautiful pavilion. She could not afford to have a nurse, but had her sister to attend to her for a couple of weeks. This sister had very little control over her, so that she insisted upon getting up at the end of a week. The doctor called unexpectedly on the tenth day and found her rocking herself before the kitchen fire. In spite of being scolded she got up to stay up on the fourteenth day, but fortunately the silk worm-gut stitches remained in for one month. It would appear from the examination of the two tubes that the very severe dysmenorrhœa every second month was due to the absolute closure of the fimbriated extremity of the tube of that side on which the ovum matured, while the somewhat less painful period every other month took place from the ovary, on the side on which the tube was patent.

Case IV.—Mrs. F., an emaciated and sallow looking woman, thirty-five years of age, who had been married eleven years without ever having become pregnant, probably for the reason that two weeks after her marriage she had an attack of pelvic peritonitis, from which she nearly died. She was five weeks in bed with it, and it was three months more before she was able to get about. That was eleven years ago, and since that time she has had slight attacks of pelvic peritonitis about four times a year, which kept her in bed about a week each time. Her bowels have always been confined, generally moving only once in eight days and defecation being very painful, as was also coitus, which generally caused her to faint away. A bimanual

examination revealed an irregular shaped and slightly fluctuating mass filling Douglas' cul-de-sac, the diagnosis of pus tubes and ovaries was made, and their removal strongly advised. Cœliotomy was performed at Dr. Lapthorn Smith's private hospital on the 13th April, the operation requiring nearly an hour of hard work owing to the density of the adhesions. The drainage tube was required for thirty-six hours. No morphine was needed, the patient having stated that the pain which she had had for eleven years had entirely gone since the operation. She was out of bed in two weeks and went home on the twenty-first day.

Case V.—Mrs. R., aged 24, mother of one child, 3 years old, since the birth of which she has never been well. She had a miscarriage four months ago, and bled steadily for a month afterwards. For this she came under the writer's care. On examination the uterus was found to be large and retroverted, with the tubes large, hard and tender, lying behind it. Lest there might be some retained placenta, the uterus was thoroughly curetted with the sharp curette which, however, only brought away the thickened and spongy endometrium. It was swabbed out with Churchill's iodine and packed with iodoform gauze. She declined at this time to submit to removal of the appendages, although she was informed that she was in constant danger of them rupturing. She was told to send for the doctor immediately if she should be ever taken with sudden pain, as the operation would have to be done at once to save her life. Nothing was heard from her for several months, when one day an urgent message was received to come at once, her husband stating that the abscess must have burst, as she had suddenly complained of a terrible pain in her side, and soon after she had fallen on the floor unconscious. He ordered her to be brought immediately to his private hospital, preparations being made without delay for an abdominal section. When she arrived she was in a condition of profound shock, having no pain, but her pulse being

fast and thready. As soon as she could be prepared, the abdomen was opened, and at the first nick in the peritoneum an ounce of thin yellow pus flowed out. The tubes and ovaries were dug out of their bed of adhesions with considerable difficulty, there being a hole in the tube where the pus had escaped. The tubes, an inch from the uterus, were thickened to the size of the thumb, consisting almost entirely of solid fibrous tissue of very brittle consistency. Beyond that point the tubes were thinned out to form an abcess cavity. The peritoneum was cleaned in the usual way and a tube inserted, from which in the course of the first day eight ounces of serum were removed. She also made a good recovery, stating that her pain had disappeared after the operation, and getting up in two weeks and going home in three.

The reader of the paper remarked that these five cases were almost exactly like each other, and differing very slightly from about twenty others on whom he had operated. He stated that he had about forty other similar cases under his care during the last ten years, all of whom he thought would eventually come to an operation, although he had not so far been able to convince them of its necessity. A few of them had remained fairly comfortable for as long as two years at a time without treatment, and then they would have a pretty sharp attack of pelvic peritonitis. Of course the longer they delayed the more adhesions there would be and the more difficult the operation. He had no apology to make for having performed these operations, as all of these women had been almost constant sufferers for from two to eleven years. On the contrary he thought it was his duty, as it was the duty of every practitioner, to diagnose these cases as early as possible, and to urge the removal of the appendages at the earliest possible moment. No one could be more averse than he was to removing an otherwise healthy organ for functional disease, but in the light of his experience with pus tubes and ovaries, he felt that he had in the past rather erred on the side of ultra-

conservatism, a fault which he promised he would not be guilty of in the future. The operation in his experience was much less dangerous than would be supposed, it being rare for the convalescence to cause any anxiety. This immunity from peritonitis, even when the tube had burst and inundated the bowels, he attributed to the tolerance which the peritoneum acquires after several inoculations with gonococcic or staphylococcic virus. So that while they were among the most difficult, they appeared to be among the safest of abdominal operations. He had generally found with his fingers in the abdomen that the condition of affairs was much worse than it had appeared to be by bimanual examination. The organs being organically diseased and their function destroyed, and being moreover a constant menace to the patient's life, he felt that we should have no hesitation in removing them.

Urinalysis in One Hundred Cases of Ether Anæsthesia.—Dr. Gordon Campbell read a paper on this subject, of which the following is a synopsis :—Specimens were examined of the urine before, during the actual time of, and after the anæsthesia and the occurrence of albumin, sugar and acetope noted and the amount of urea estimated during the actual anæsthesia as compared to the normal. The amount of urine secreted while under ether anæsthesia was found to be within the normal limits, but the amount of urea excreted was largely diminished, averaging only ($\frac{3}{8}$) three eighths of the normal; *i. e.*, at the rate of 177 grains per diem. Both the amounts of urine and of urea varied inversely with the length of anæsthesia. Albumin was found in the urine secreted during anæsthesia in 6 per cent of the cases and in three of these the presence of a sound in the bladder during part of the time was looked on as a possible cause. In no case did the amount of albumin exceed 2 grammes per litre and in every case it disappeared the following day and was considered to be of vaso-motor origin. Sugar was not found as a product in any of the cases. Acetone was invariably present for two days following anæsthesia and in 64 per cent appeared during the administration. It lasted from 3 to 7 days after.

Dr. Buller, reminded Dr. Campbell of a case in which he

had administered ether to a patient who was in a very advanced condition of saccharine diabetes, and who became dangerously cyanosed during the administration. Noticing that no allusion has been made to any such case in the paper, the speaker wished to know if Dr. Campbell had ever since met with any similar case.

Dr. Reed wished to know what test had been used for acetone, also whether the latter was present in sufficient quantity to be recognisable without distillation.

Dr. Lapthorn Smith declared himself as no friend of ether but would like to give it its due. He did not think the ether was responsible for the diminished quantity of urine secreted after anæsthetisation. The preparatory treatment which is employed in cases of laparatomy would alone have this effect. For some days before the operation a patient is kept on dry food, and purged freely by means of cathartics, thus getting rid of a large quantity of water from the system: the day previous to the operation the patient is not allowed any water to drink; and again some operators prohibited food for 24 hours after the operation. All this must have a very considerable effect in lessening the quantity of urine. Now as to the diminution in the quantity of urea, he ventured to say that this diminution was not confined to the patient, but that both the operator and the anæsthetist would find themselves similiarly affected. It must be remembered that urea is oxidized nitrogen, and that during every hour that a person is in a room without much air, or with air deficient in oxygen, the oxidisation of the nitrogen into urea becomes more difficult, and it is often compelled to stop at the uric acid stage. For his own part he has frequently found himself, after a prolonged operation, in a crowded room, to be suffering from soreness or aching in the joints, which he attributed to an excess of uric acid in his blood. Again as to the safety which Dr. Campbell has administered ether, he thought more credit was due to the anæsthetist than the anæsthetic. A great deal was the result of the use of Clover's Inhaler, but this was an apparatus which every one could not manipulate with success, very few have been as successful with it as Dr. Campbell. By means of it, the quantity of ether administered during a given time is much less than would be required to keep up the same degree of

insensibility, were the ether administered by any other means ; as a result, therefore, the patient consumes less of the drug per minute or per hour, and consequently runs less risk.

Dr. Hingston complimented Dr. Campbell on the spirit of thoroughness with which he had conducted these investigations ; and expressed a wish that Dr. C., might undertake a similar series of experiments, with chloroform. To have the same observer study the properties of the two drugs would be much more satisfactory, than two investigators each confining himself to one.

Commenting on the details of the paper, Dr. Hingston took exception to the term "post" being used to designate the period during which the patient was really under the influence of the anæsthetic, and suggested that a better division would be into "ante" "per" and "post," or before, during and after the administration.

Dr. Wesley Mills praised very highly Dr. Campbell's paper. He concurred in Dr. Smith's criticism relative to the changes brought about in the urine from excitement etc., as factors which should be taken into consideration when estimating the effects of the anæsthetic on that secretion. In this respect he alluded to the differences which he had frequently noticed in his own urine after lecturing, or when labouring under the strains of examination time, differences which a colleague of his had also observed.

Dr. James Bell, expressed himself as greatly interested in Dr. Campbell's observations. As a routine practice he was accustomed to use ether as an anæsthetic, reserving chloroform for certain conditions where the former was said to be contra-indicated. One of these was in affections of the kidney. He had never been able to see any good reason for this restriction, and a study of Dr. Campbell's cases was not calculated to remove the doubt. Only six cases of albuminuria appear in this list ; in three of which a sound having been passed into the bladder is sufficient in itself to account for albumen in the urine. Relative to the undoubted diminution of urine, and urea following ether anæsthesia, it must be remembered that such phenomena are susceptible of more than one explanation. The length of time during which the anæsthetic had been

administered, and the effects of the shock proper to the operation itself have to be taken into account in this respect. At the same time, Dr. Bell, thought it well to remember that one hundred cases were after all a very small number for us to draw any positive conclusions from; to do this, the investigation should be continued, and extended over a great many hundred cases if possible.

Dr. Gordon Campbell, in reply to Dr. Buller, said he remembered well the case referred to and thought that the cyanosis in that case was not due to the ether, but to a spasm of the glottis, because upon introducing a finger into the patient's mouth, and raising the epiglottis, the spasm was relieved. The only other case he had seen with sugar in the urine took the ether normally, although it must be said that here the amount of sugar was very small—a mere trace only.

In answer to Dr. Reed, he said it was his practice always to distil the urine before testing, he tried once or twice testing the specimen direct, but did not meet with much success, and thought it would not be easy to detect in that way.

With regard to Dr. Bell's remarks, two cases showed pus in the urine before the operation, and as far as they could judge by the eye, and by microscope, the condition afterwards remained the same. He did not mention these, as two cases he considered proved nothing.

As to the time occupied in the operations, Dr. Campbell explained that most of these cases had been drawn from his experience in Dr. Gardner's Private Hospital, where, having no fear of the anæsthetic, they were accustomed to give the ether in the patient's room, and keep her under the influence of it until she returned there; in this way the length of time occupied by anæsthesia might sometimes exceed by an hour the time of the operation.

Dr. Wm. Gardner in reply to Dr. Smith who had called attention to the importance of the preparatory treatment in laparatomy in influencing the diminution in the quantity of the urine, said that his patients had very little preliminary treatment. His operations are performed at 9 a.m.; a dose of castor oil the night before and at 7 a.m., they have a cup of beef tea. This constitutes all their preparatory treatment.

Exophthalmic Goître.—Dr. A. W. Haldimand, gave the clinical history of a case which came under his observation in the Metropolitan Dispensary. The symptoms were exophthalmos and goître which first appeared six weeks ago. There was no tachycardia, which is peculiar since authorities seem agreed in considering this an ever present symptom. Neither were there other circulatory symptoms, such as throbbing of the carotids, or flushing of the face. There was nothing in the family, or personal history of the patient to account for the disease. The patient was a barber by trade 27 years of age, and with the exception of a few attacks of gonorrhœa, never a day sick in his life. Auscultation revealed a slight systolic murmur, and his pulse was found to be somewhat irritable. The treatment employed was eight minims of the Tinct. Bella donnæ three times daily, under which the goître rapidly diminished. The interesting features in the case, and those which he thought warranted his bringing it before the society, were the acuteness of the onset, and the absence of tachycardia.

Stated Meeting, May 18th, 1894.

James Bell, M.D., President, in the Chair.

Morphœa.—Dr. Gordon Campbell exhibited a case of this rare skin disease. The patient, a Russian girl about 25 years of age, showed in the left mammary region, an irregular patch of an ivory white colour, having a smooth and almost polished appearance and surrounded by a violet zone. The skin over the affected area was distinctly thickened. The symptoms were a slight tingling and itching on the patch. It had been present for the past nine months, while she has been living three years in this country. This is a very rare affection, only occurring once in several thousand cases of skin diseases, and, as far as he (Dr. Campbell) could learn, it is the first case of the kind ever seen in the General Hospital. This affection is regarded by Radcliffe Crocker as a form of diffuse scleroderma.

Dr. Foley had only seen three such cases. Dr. Crocker's statistics gives its frequency of occurrence as 6 in 10,000

cases. He wished to know if Dr. Campbell had tried the massage treatment in this case.

Dr. LAFLEUR had seen one case of diffuse sclerodema which, although spread over the whole body, bore a close resemblance to this case. The infiltration was even more pronounced than here, giving the skin a peculiar brawny feel, and although the blanching of the skin was well marked, there was yet no zone of redness. It was at first thought to be an œdematous condition; but as there was no pitting on pressure, this view had to be given up.

Dr. GORDON CAMPBELL, in reply to Dr. Foley, said he had purposely refrained from active treatment, as he wished to preserve the features of the case in all their distinctness for the members of the Society. An interesting point about morphœa is that it occurs on the breasts of woman, and it is thought that the irritation of the corsets acts as a causative agency. That does not seem unlikely to be the case here, as the patch occurs right on a line with the upper margin of the corsets.

Case of Primary Angiosarcoma of the Upper Portion of the Left Pleura.—Dr. ADAMI showed the specimens and read the report of a man shown before the Society by Dr. Stewart on the 20th of last April.

Cases of primary sarcoma, affecting either the lung or the pleurae, are far from common, and the case which we are here about to record possesses, for us at least, a peculiar interest, inasmuch as a postive diagnosis of the condition was made during life. The patient, J. Van der Wee, a Belgian by birth, aged 35, had been for some years a glass blower. He first fell unwell in the beginning of February, 1894, experiencing constant pain in the left side of the chest. Shortly before admission into the hospital (upon the 7th of April) he suffered from frequent vomiting. Upon admission it was noticed that the upper portion of the left thorax presented very definite bulging, and from the third rib upwards upon the left side there was absolute dullness upon percussion, while auscultation over this area only gave a distant blowing breathing. Vocal fremitus was absent. The dullness and the auscultatory signs

were the same both above the clavicle, and above and around the upper portion of the scapula behind. While in the hospital pressure symptoms developed in the left arm, the left radial pulse was distinctly weaker than the right, and the difference was well shown in sphygmographic tracings obtained from the two radials; the surface temperature of the left arm was higher than that of the right, and there was pain extending down the inner side of the left arm.

During the last week of life the patient suffered from excessive vomiting, and was unable to retain any nourishment. Three days before death, which occurred on May the 5th, the patient was noticed to have become suddenly peculiarly anæmic, within 24 hours he became delirious, and although a few hours before death his condition seemed to be improved, there was a return of the symptoms and he died with comparative suddenness.

The absence of vocal fremitus, complete dullness on percussion and the pressure symptoms, together with the absence of any marked expectoration, and again the absence of pulsation, led one of us (S.) to a diagnosis of sarcoma. On April the 15th, in order to confirm this diagnosis, an ordinary Pravaz syringe was carefully sterilised, the skin over the region of most considerable bulging, namely, over the second interspace on the left side in front, was washed and rendered aseptic, and in the presence of both of us, Dr. Decks, the resident physician, passed the needle into the swelling and obtained without great difficulty several drops of fluid. This fluid was in the main composed of blood. In it could be seen small whitish or creamy masses of more solid material. The needle was immediately passed through the side of the cotton-wool plug of a tube of sterilised Glycerine-Agar-Agar. A few drops of what remained in the syringe were immediately examined unstained under the microscope, but beyond plentiful red corpuscles nothing could be clearly distinguished; later one of the small whitish masses removed from the surface of the Agar-Agar, and stained under the cover slip with a dilute solution of methylene blue, showed the presence of large numbers of cells of a size rather larger than that of ordinary leucocytes and with nuclei which instead of being rounded were of a blunt oval shape. Together with these cells there could occasionally

be seen definite thin spindle-shaped cells with nuclei of a more elongated oval or spindle-shaped appearance, but more rarely there were to be recognized larger cells, three or four times the diameter of the cells which formed the main mass. These were filled with minute oily droplets, and had also a more pigmented appearance. It may be added here that the Agar tube placed in the incubator at 37°C. remained completely sterile, save that after several days there developed one small whitish growth which was found non-pathogenic and which was evidently a contamination from the air.

These cells were from their appearance neither pus cells nor the products nor the accompaniments of any form of chronic inflammation; their appearance entirely tallied with that of a sarcomatous nature, and it was held that here there could be none other than some rapidly-growing oat-shaped cell or oval celled sarcoma present, and in fact the patient was brought before the Montreal Medico-Chirurgical Society upon April the 20th, and the condition was there demonstrated as being one of sarcoma of the lung, or pleura.

At the autopsy performed upon May the 6th, the body was found to be that of a well-developed adult, of medium size, with no signs of emaciation or œdema. There was no difference to be noticed between the two arms, either in circumference or in other respect. The head was not examined. Upon opening the thorax a large soft mass was discovered extending from the very upper extremity of the left side of the thorax down to the level of the sixth rib in the left mammary line. At the level of the second rib the mass extended from the junction of the second rib with its cartilage on the right side across the whole of the left chest. Below this level its edge slanted obliquely towards the left nipple and to the level of the sixth rib as above mentioned. The upper portion of this mass, down to the level of the third rib, was apparently firmly adherent to the costal pleura, so that in order to remove the growth in part this had to be dissected off from the ribs. Below the level of the third rib the wall of the capsule appeared to be thinner; it was of a dark bluish colour and resembled a cyst containing blood. The heart was displaced downwards, and to the left the right lung showed slight adhesion along the fourth rib, behind and forward, as far as the anterior axillary

line. Upon removing several inches of the upper ribs upon the left side in order to dissect out the tumour in part it was found that the intercostal humeral nerve passed down from the pleura within the thoracic cavity, that is to say, to the inner side of the ribs, and that it appeared to be enmeshed or implicated in the capsule of the growth, emerging laterally between the second and third ribs. The first and second ribs of the left side were slightly eroded as far as their cartilages, the third as far as the axillary line, the fourth as far as the angle.

Upon removing the greatly enlarged left lung, the mass upon the upper and anterior surface was found to be peculiarly soft, and so soon as the capsule formed by the costal pleura was cut in two, a large amount of soft semi-fluid material of a dark purple color easily passed out through the openings made. As much as 700 cubic centimetres of this material was taken out at the autopsy, and a quantity almost equal in amount was still left within the sac removed at a later period. Save that some portions of this material were of a slightly denser consistency, the whole might have been taken for soft breaking down blood clot.

Upon cutting up the bronchi of the left lung, and passing a probe down the various smaller-sized bronchi of the upper portion of the lung, no communication could be detected between these and the tumour mass, and careful examination showed that this mass lay in the pleural cavity above and anterior to the upper lobe of the left lung. There had evidently been an old chronic pleurisy of some standing, causing adhesion between the upper lobe or the lower boundary of this lobe and the costal pleura, and it was in the sac formed thus between the two layers of the pleura over the upper lobe that a tumour had developed and had extended. The upper lobe itself was greatly compressed, the lower lobe showed compression to a lesser extent ; the right lung was smaller than normal. It presented a certain amount of emphysema. At its apex were three or four old calcareous tubercular nodules well encapsuled. The pericardium contained an ounce of slightly blood-stained fluid, the heart showed no signs of inflammation, the valves of the heart in general were normal, the abdominal organs presented nothing calling for special remark in this connection. No secondary

growths could be recognized by the naked eye in any of the organs.

Upon examination of portions of the softened mass of the tumour, carefully selected from various areas, and hardened either by placing in boiling water for one minute or by Müller's fluid, it was found that the lower edge of the tumour mass was almost entirely, if not quite, pure clotted blood; portions rather denser in their consistency originally, but still equally blood-stained, presented a very interesting condition. They were found to be formed of lobules of sarcomatous tissue, whose cells showed up very well by contrast staining, either with methylene blue and eosin, or with hæmatoxylon and eosin. Running in various directions through these lobules of sarcomatous tissue were greatly dilated vessels of a purely embryonic type, with walls so delicate that the flattened cells forming them could only here and there be recognized. Immediately around these vessels the sarcoma cells were more densely arranged; these cells were identical in appearance with those that had been removed by the hypodermic needle. They were slightly oval, their nuclei were also oval and stained well, and they were definitely larger than, in fact almost twice as large as, the leucocytes which could be seen here and there lying within the vessels. Away from the vessels the cells became more loosely arranged, and here and there stained badly, inasmuch as lobules were separated from each other by very extensive effusion of blood, and this extravasated blood appeared to be causing the destruction of these outer layer of cells, the extravasation extending in between them.

Careful study of sections taken from various points over the surface of the upper lobe of the left lung led to the conclusion that the tumour had not originated from the visceral pleura; in general the tumour mass could be easily removed from the surfaces of the lung, leaving this relatively smooth and glistening. On the other hand, sections through the costal pleura from the level of the second interspace upwards showed that here the pleura had undergone great fibroid thickening and that it was infiltrated by masses of sarcoma cells. It would seem evident, therefore, that the tumour had originated, not

primarily in connection with the lung, but in connection with the costal pleura.

This condition presents very many points of interest; it confirms the diagnosis that had been made *intra vitam*. The rapid growth of the tumour and the erosion of the upper ribs, indicate that in its development this tumour had pressed upwards and had thus affected both brachial and nerve supply. The fact that the tumour was extra pulmonary, will explain the remarkable absence of direct pulmonary symptoms observable during life; while the character of the growth is fitted to throw light upon the symptoms which immediately preceded death. As we have mentioned, the tumour was of a peculiarly vascular nature; even those parts which were found to stain so well, and which showed most clearly the sarcomatous nature, were when removed from the body, of a consistence scarcely firmer than that of recent blood clot, tearing apart with great ease. In addition to this natural softness of consistency on the part of the tumour, there had evidently been a very great amount of hæmorrhage into the growth, so that the tumour in its lower part was nothing but pure blood clot and in the rest of the area was a mixture of blood and sarcoma tissue.

The question arises, had these hæmorrhages been continually occurring during several weeks, or had there been one great and extensive hæmorrhage, which coupled with the breaking down of the neoplasm, may be looked upon as having been the one immediate cause of death. Undoubtedly there had been a certain amount of hæmorrhage and breaking down of the tumour some weeks before death. This alone is capable of explaining the presence of the occasional large leucocytes, or, if the term may be employed, "Staubzellen," which were found at the time of the exploratory puncture in April, large cells containing the debris of the fatty degeneration of the sarcoma tissue, together with a certain amount of pigment derived from extravasated blood. But we are, notwithstanding this evidence, inclined to believe that shortly before death a most extensive hæmorrhage had occurred, for this alone will account for the sudden onset of extreme anæmia, which was noticed three days before death, and the almost equally sudden low delirium which ensued. That this hæmorrhage

was in itself sufficient to account for death we will not say, but it had led to extensive breaking down of the sarcoma tissue, and this hæmorrhage, breaking down of the tissue and absorption of the products formed together, in our opinion, a sufficient cause.

Caries of the Vertebræ.—Dr WILLIAMS exhibited a specimen of tubercular spine, removed at a recent autopsy at the Royal Victoria Hospital. The tenth dorsal vertebra was affected, the changes in which were noticed chiefly in the body. The latter was increased in size, extending slightly forwards, laterally, and backwards into the canal. As a result of this last extension, the canal was diminished in size by five or six centimetres, which gave rise to a pressure on the spinal cord. The intervertebral substance, however, seemed slightly affected, the bone having grown over it in the canal.

Dr. ADAMI called attention to the fact that in the intervertebral disc immediately above the tenth dorsal vertebra there was a small calcareous mass evidently tubercular in origin, and indicating apparently, from its relationship that the disease had commenced in the intervertebral disc and thence had extended into the bone.

Dr. JAS. STEWART had this case under his care, and the symptoms pointed clearly to a compression myelitis. For a time there were marked symptoms of irritation of the nerve roots. The extreme tenderness of the bones was an interesting feature, and one not always seen in such cases; for instance, Dr. Bell has at the present moment two cases of tuberculosis of the spine under his care in the Royal Victoria Hospital, and in neither of them is there any special tenderness. The question arose whether an operation in this case would have been followed by any beneficial results, but as the patient was so far reduced when admitted to the hospital, it was doubtful whether he could stand the shock of an operation.

Dr. GUNN had also seen this case. The patient came to the Hospital complaining of lumbago, lasting over a year.

He felt pretty well otherwise. Examination revealed some tenderness over one or two vertebræ, and it was on this account that he was admitted. Considering this case, Dr. Gunn thought that all cases of lumbago, accompanied by tenderness of any of the vertebræ, should be regarded with suspicion.

Dr. Jas. Bell took a great interest in cases of this kind. It seemed to him that in a case where the cord is pressed against the unyielding vertebral arch, the removal of that arch should relieve the symptoms, provided it was done early enough. But as this is seldom the case, it becomes a puzzling question to decide what cases to operate upon, and what ones to leave alone. The opinion held by many in the profession that in these cases of paraplegia the condition was apt to undergo spontaneous improvement, had much to do with deterring men from early operation and in his experience this opinion had very little foundation. He could recall several cases where he regretted not having operated early, when the paraplegia first appeared, and where he would have operated were it not for this prevaling impression. In cases of this kind he thought the actions of surgeons should be prompt and fearless, for it requires only a comparatively short time for degenerative changes to take place in the distal portion of the cord. He had already operated upon two cases, in both of which the paraplegia had been complete for two or three months. Both seemed to improve for the first two or three days after the operation, but in neither was the improvement permanent. He asked how long after the paraplegia develops can one reasonably expect recovery to take place on removal of the pressure ?

Dr. James Stewart, in reply to Dr. Bell's question, said that in an ordinary case of descending degeneration of the lateral columns, recovery may take place many months afterwards, if the pressure is of an ordinary kind. Of course, where there has been absolute obliteration of all the functions of the column, one would not expect restoration to take place after three or four months.

Osteo-Sarcoma of Femur.—Dr. Williams showed a specimen of a bone tumour occurring in the lower portion of a femur, removed by Dr. Kirkpatrick, which measured about 20 inches in circumference. The tumour was lobulated in outline, and quite a large hæmorrhage had occurred in front of the knee joint, and numerous hæmorrhages were noticed in various parts of the growth. The inner surface of the patella and the head of the tibia were somewhat eroded.

Dr. Adami said that microscopically the tumour presented the characters of a periosteal sarcoma of the large mixed cell type. A little distance from the surface the cells were to be found embedded in a hyaline stroma, and the section suggested the possibility that we were dealing with a malignant enchondroma. In the more central portions hæmorrhagic and necrotic areas existed. Areas also were seen which had almost the appearance of cylindroma. An interesting point in this tumour was the tendency which apparently existed for the tumour substance to radiate from the joint. The early history also received in this case, was the history of a joint trouble. At first the growth was periosteal, but after a time it grew inwards also ; yet the periosteal growth always predominated, as could be determined by observing the shaft where it could be noticed that the tumour extends to a higher point externally than internally.

Dr. Kirkpatrick showed the members a photograph of the limb taken prior to the operation. The history extended back only ten months. The patient was a farmer, 22 years of age. Sharp transient pain in the knee joint was the first symptom noticed. There is no history of injury. At the end of four months he could not bend the knee beyond a right angle. Until the 6th month it was regarded as an ordinary synovitis, and treated with blisters, etc. At the seventh month two lumps noticed at the knee joint : followed, two weeks later, by similar lumps in the popliteal space. In the middle of the eighth month these lumps had

grown into one mass around the knee joint ; and the circumference of this mass measured eighteen inches. One month later, or about the end of the ninth month, it had increased to a circumference of twenty-two inches ; at which time the operation was performed. Ten months ago the patient weighed over 200 pounds, but when he entered the hospital he only weighed 146½. Amputation at the hip joint was performed on April 22nd by Wyeth's method. The limb was transfixed by two iron skewers, which were pressed completely through the limb, and proved a most satisfactory means of fixing the esmarch. No blood was lost when the circular cut was made, except what was in the limb below the point of removal, which however, was considerable for owing to the nature of the tumour, no bandage was employed to empty the limb of blood. After loosening of the skewers and the constricting band below them, much blood was lost. To counteract the effect of the loss, two hypodermics of strychnia, and two enemata of saline solution were administered, and it was noticed that each of the latter had a marked and almost immediate good effect on the pulse. The patient is now doing well and going about the ward. The wound was dressed in the ordinary way.

Intra-Capsular Fracture of the Femur.—Dr. WILLIAM'S showed a specimen which was obtained by Dr. Adami from a woman, 75 years of age. She lived three years after the fracture occurred and was able to walk about with the injured limb. The specimen shows that no bony union had taken place ; numerous fibrous bands pass across the fractured surfaces, uniting them with fibrous material so dense that it resembled cartilage, and was firm to the feel. In reference to a discussion which took place at a previous meeting as to how often, if ever, bony union occurs in these cases, Dr. Williams remarked that he had looked up all the specimens of this kind in the McGill Museum, and found that out of ten specimens of the unimpacted intra-capsular fractures, not one showed bony union; while of two of the impacted variety, one showed union.

Hyperostosis Following Fracture.—Dr. Williams exhibited a tibia and fibula, illustrating this condition. The tibia showed signs of two or three old fractures which had occurred at different times. A large bony growth extended between, and united the tibia and fibula in their upper portion. This bridge, as it may be called, of bone is of interest, inasmuch as it frequently takes place in either the leg or forearm when both the bones are broken. Firmly attached around this bony growth, was a large mass of firm fibrous tissue with numerous sinuses from which pus was oozing.

Dr. James Bell remembered the subject of the last specimen shown. He was a man about 40 years of age, and a hard drinker, who had a compound fracture of the leg, from which he recovered with difficulty, but was ultimately discharged from the hospital with his wounds all healed and his bones united. He soon had another spree in which he again fractured his leg (again a compound fracture) in the same place.

Exostosis Bursata or Exostosis Cartilaginia.—Dr. Bell showed a specimen. This form of exostosis differs from the ordinary by growing in the neighbourhood of joints, from the epiphysial line, and the growths are usually directed away from the joint at an angle of 45° from the shaft of the bone. They are covered at the free extremity with cartilage, and enclosed synovial membrane which often contains a large number of free bodies. The first case of this kind which came under Dr. Bell's care was in 1888, at which time only two cases were on record, the report of his case being then the third. In Prof. Billroth's case 25 free cartilaginous bodies were found within the synovial sac, while his first case contained 55 similar bodies. Bergmann reports a case in which 500 were found. The exostosis in the present case was situated in the region of the shoulder joint, and grew from the bicipital groove at an angle of 45° from the shaft. As to the pathology of these growths—they are generally explained by Cohnheim's

theory of embryonic cells, lying dormant until something occurs, or the conditions are favourable, for them to take on active growth.

Cultures of Gonococci.—Dr. ADAMI reported a case of gonorrheal synovitis, the clinical history of which is rather interesting as showing the importance of bacteriology as aid to diagnosis. The credit of reporting this case was due to Dr. H. S. Shaw, resident surgeon at the Royal Victoria Hospital, who, Dr. Adami stated, had done all the work connected with it. The patient was a man with a swollen knee and a slight thin discharge from the urethra. The question arose as to whether or not it was a specific synovitis. The knee having been rendered carefully antiseptic, a Pravaz syringe was used to withdraw some drops of clear fluid which were immediately spread upon the surface of two tubes of glycerine agar, which ten days afterwards showed the gonococci culture. Subsequently gonococci were discovered in the urethral discharge. Dr. Adami remarked that it is of importance to know that the gonococci may be cultivated on glycerine agar, a material which is easily obtained, where hitherto it was thought to require blood serum for its growth. He pointed out that the growth was very slight and that it might be not so much a growth upon the glycerine agar as upon the fine film of synovial fluid which covered it.

Pseudo-Membranous Enteritis.—Dr. GUNN read a paper upon this subject which has not yet appeared.

Dr. LAFLEUR remarked that he had seen one of the cases reported by Osler, while at the Johns Hopkins Hospital. The ailment did not impress him as being very distressing A slight looseness of the bowels, with the occasional passage of very perfect intestinal casts, which microscopical examination showed to be composed of a hyaline laminated material, with here and there desquamated cells from the mucosa, but with very few leucocytes or red blood cells. As far as he could remember the treatment was local—washing out the bowels, etc.

Dr. ALLAN had a case of this kind which came under his care at the Montreal Dispensary. She passed large quantities of these casts daily.

Dr. MORROW wished to know if this condition was analagous to the somewhat similar condition which occurs in the respiratory tract.

Dr. GORDON CAMPBELL had seen a case of this nature in which the chief trouble was the involuntary passage of the casts. They were most commonly passed during sleep, and for a time it was not settled whether they were of rectal or vaginal origin.

Dr. GUNN, in reply to Dr. Morrow, said it was his impression that the pseudo-membranous condition which occurred in the bronchi was inflammatory and allied to the diphtheritic form. There was consequently no similarity between them.

Stated Meeting, June 1st, 1894.

J. B. MCCONNELL, M.D., 2ND VICE-PRESIDENT, IN THE CHAIR.

Dr. S. R. Mackenzie was elected an ordinary member.

Chronic Nephritis in the Dog.—Dr. ADAMI exhibited specimens, and gave the results of his examination, of a case of chronic interstitial nephritis in a dog, submitted to him by Dr. Wesley Mills. The two kidneys differed in size, the right being the larger, and to the naked eye presented the condition well known as chronic interstitial nephritis. The capsules in both were thickened: they peeled off without great difficulty, revealing a nodular surface beneath. They cut firmly: the sections showing dilated pelves, and the cortex varied in thickness, in some places corresponding to the depression of the surface, and was almost entirely atrophied; that of the right kidney, on the whole, appeared less affected than that of the left. Microscopical examination revealed a condition similar to that seen in chronic interstitial nephritis of man. There was a general fibrosis of the medulla, with occasional

tubules containing traces of uratic deposit, while the pelvis of the left kidney contained a minute calculus. The ureters in both had rather thickened walls, but neither in these nor in the bladder was there found any evidence pointing towards an obstruction to the flow of urine.

Commenting on the existence of this disease in the dog, Dr. Adami remarked that while in his experience, as well as in that of Dr. Mills, it was of rather rare occurrence, yet it was easy to conceive causes for its production; inasmuch as the factors of excessive inception of nitrogenous food, coupled with insufficient exercise, which are recognized causes of the condition in man, are both apt to prevail in the life of the dog. There is a tendency towards fibroid valvular change frequently observed in dogs, but arterial sclerosis he had never observed. In over-fed dogs an eczematous condition of the skin is not uncommon, and taking these indications of the gouty diathesis into consideration, he was inclined to believe that, if cirrhosis of the kidney in dogs was not often recognized, it was because careful autopsies have not been performed in sufficient number.

Dr. Wesley Mills had received these kidneys from Dr. Darling, a graduate of the Faculty of Comparative Medicine, who thought the condition very rare, and published an account of the case in the *Journal of Comparative Medicine*, which report Dr. Mills read in detail. Commenting on the case, Dr. Mills remarked that although diseases of the kidneys are considered of rare occurrence amongst the lower animals, systematic autopsies are not by any means frequent, especially in the case of the dog. He was impressed with the truth of Dr. Adami's view of the case, as seen by the history; this animal was fed on flesh three times daily, and had a hypertrophied left ventricle. Moreover, it is well known that dogs are very susceptible to rheumatism, and rheumatism is allied to gout. The skin of the dog is easily disordered, and almost every ailment he is subject to, expresses itself by some abnormal condition of that portion of his anatomy.

In reply to a question of Dr. REED as to whether albuminuria ever occurred amongst dogs, Dr. MILLS remarked that the matter had never been much looked into owing to the great difficulty of catheterising dogs. He had worked upon the urine of dogs, and he could say, as to healthy animals, that there was a certain amount of uric and oxalic acids as well as a great deal of sulphates in the normal urine.

Angioma and Adenoma in a Woodchuck.—Dr. ADAMI showed the liver of a woodchuck (*Arctomys monax*), which had also been sent him for examination by Dr. Wesley Mills At the right extremity of the organ a tense bulging could be seen, which extended deeply into its substance, as well as behind, below, above, and in front of it. Upon cutting into this mass, it was seen to be sharply circumscribed, somewhat paler than the normal liver tissue, with here and there spots of a deeper tint, marking hæmorrhages or dilated vessels Microscopical examination of the tumour revealed different conditions in the periphery and the central portions. The peripheral specimens showed adenoma of the liver cells, not biliary adenoma which is more common in man, but an overgrowth of the liver cells proper which, however, were not regularly arranged in lobes with the bile ducts separating and encircling them, as in normal liver, but more scattered. The central portion of the tumour showed, in addition to the hæmorrhages already noticed, dilated vessels and cavernous-like spaces, characteristic of angioma. The combination of the two conditions then, adenoma and angioma, make it extremely interesting as well as rare. Comparing this with analgous conditions found in the human liver, Dr. Adami remarked that in man the liver is perhaps the most frequent seat of angiomata ; but a combined condition as we have here is very unusual in the lower animals, the tendency is to have adenoma develop rather than carcinoma ; and that the former is the condition here seems confirmed by the well defined outlines of the tumour and the absence of any sign of infiltration into the surrounding tissue.

Dr. Wesley Mills remarked that the woodchuck in question was one of the animals he had been rearing and studying, with a view to arrive at some sounder knowledge on the question of hibernation. This was the one which did not hibernate. He obtained it when quite young, and kept it for three years, and without having ever shown any symptoms of being unwell it was found dead one morning in the cage. At the post-mortem he noticed a dark mass standing out in the folds of the mesentery connected with the liver; there seemed to have been considerable hæmorrhage which he thought was the cause of the sudden death. At the same time it may be noted that it died in the spring, a season when these animals' vitality is at its lowest, and but little is required to end their career.

Dr. Lafleur wished to know why Dr. Adami considered adenomata of the liver very rare in man. Although he himself only remembered having seen one case of such, yet quite a number of these tumours had been reported, and the condition seemed to be common in France.

Dr. Adami in reply said that the cases of ademonata reported, as well as he could recollect, were only biliary adenomata; not adenoma of the liver cells as in this case.

Ovarian Cyst.—Dr. Adami exhibited a large ovarian cyst received from Dr. Alloway. It consisted of an enormous sac, within which were secondary sacs, or daughter cysts, and was a typical example of an ovarian cystoma, the interest in the specimen being in the one huge sac.

Dr. Alloway stated that the patient was an old woman, 61 years of age, and was remarkable for the activity which she showed considering her age and the enormous distension of her abdomen. She complained of no pain, but suffered from a complete procidentia of the pelvic contents. It was this latter condition which first led Dr. Alloway to doubt the primary diagnosis, that the tumor was connected with the liver, and on further investigation he found he could separate the border of the liver from the upper portion of the tumour; the dull note over the tumour was

continued into the pelvic cavity. The doubt as to diagnosis was the most interesting feature in the case.

Ovarian Cyst.—Dr. Adami showed a second specimen of an ovarian cyst received from Dr. Alloway. This also showed secondary cysts, but not so highly developed as in the former case. There seemed to have been a certain amount of inflammation about the main sac.

Dr. Alloway.—The patient was an unmarried woman, 40 years of age, who had been suffering from, and been under treatment for the past six months, for recurring attacks of pelvic inflammation. Recently the abdomen began to enlarge very much, and seeking advice, a diagnosis of ovarian tumour was made. The whole cyst wall was united to the parietal peritoneum, and in some places to the intestines. These adhesions were very dense and had to be separated inch by inch, thereby increasing greatly the difficulty of the operation. The intestines were of the colour of port wine, and the coils were united together by a soft gelatinous material, which was easily broken down without injuring the bowel. This latter condition Dr. Alloway had never before seen in abdominal sections, and thought it might have been the result of the very recent peritonitis.

Tubal Pregnancy.—Dr. Alloway gave the following history: The patient, a lady 28 years of age, had four or five miscarriages, never having a full term child. She had her last miscarriage about six weeks ago, which was followed by a metrorrhagia of three weeks standing. He found the parts so exquisitely tender as to preclude exact diagnosis, at the same time he came to the conclusion that there was some mass growing upon the left side of the uterus, and that the interior needed curretting. The curretting he first performed, and while the patient was under ether he made a thorough examination with a view to ascertain the nature of the growth to the left of the uterus. This seemed to be in the broad ligament, and as the idea of tubal foetation presenting itself he advised

an immediate operation for its removal. One week later the patient was again put under ether and the abdomen opened. A large mass was noticed coming up on the left side, which shoved the uterus to the right. It was of a dark bluish color, hard in parts, while in other parts it had the feel of a cyst filled with fluid. The segmoid flexure of the large intestine had become adherent to the tumour which it completely encircled, and entered the pelvis by the right instead of the left side. The ovary was not distinguishable but was part of the tumour mass. The mass was removed and the patient has done very well, and is now almost convalescent. The condition here could not be distinguished from a hæmatoma of the ovary, which condition it really was, but, in his opinion, it was likely to be caused by a ruptured tubal pregnancy.

Dr. Armstrong said he had now seen quite a number of extra-uterine fœtations, and his experience was that the clinical history in these cases has been anything but uniform and clear. In none of his cases has he seen that clear clinical history which the text books laid down. There is often no definite history of a skipped menstrual period, no severe pain, no condition of collapse indicating a serious internal hæmorrhage. This indefinite element in the history should always be borne in mind, as many of those cases if neglected will likely go on to a second rupture which must prove fatal. Whenever there is a localized mass on one side of recent occurrence, Dr. Armstrong thought the matter should be closely investigated with a view to exclude extra-uterine fœtation.

Dr. J. C. Cameron wished to know upon what data Dr. Alloway had based his diagnosis of extra-uterine fœtation?

Dr. Alloway in answer said that the patient had gone three weeks over a menstrual period; when the flow did commence there was no history of any clots or solid masses being passed, nothing but a constant trickling flow of blood; there was also a history of a sudden acute attack of pelvic inflammation accompanied by a certain degree of

collapse—not the collapse due to a large hæmorrhage, but the collapse accompanying shock. This acute inflammatory attack was passed over very lightly at the time, being regarded as some transient alteration in the bowel. But when taken in connection with the missed menstruation, and the mass to the left of the uterus, Dr. Alloway thought there was abundant evidence of extra-uterine pregnancy. The operation moreover confirmed his diagnosis, inasmuch as a hæmatoma of the ovary is a very rare condition, and the failure to find a fœtus proves nothing, since in those cases where we have very early fœtation, no evidence of the embryo proper is found.

Dr. J C. Cameron believed it to be rare for pregnancy to have existed, for the ovum to have attached itself to, and grown in the tube or uterus without leaving some evidence of the fact behind. Unless one could produce some such evidence, he did not think they were justified in pronouncing and reporting it as a case of extra-uterine pregnancy. The symptoms of inflammation and shock upon which Dr. Alloway lays such stress, are just as fully symptoms of ovarian hæmatoma as of extra-uterine pregnancy.

Dr. Adami while admitting that Dr. Cameron's remarks were in some respects well founded, he yet wished to suggest the possibility that after all it might not be so easy to detect fœtation by the microscope. He referred to the recent case reported by Dr. Armstrong in which placental and fœtal tissue were sought for in vain, and in which a diagnosis of extra-uterine pregnancy was arrived at by the finding of a curious little malformed body like a fœtus. Here suppose, which is not unlikely, this fœtus had been lost, or passed out, or absorbed, no evidence would have remained of the abdominal fœtation.

Epithelioma of the Cervix Uteri.—Dr. Alloway next produced a photograph of a case now under his care in the General Hospital. The woman was operated upon about 10 days ago for a malignant growth of the uterus, accom-

panied by a constant discharge, which had lasted for the past six or eight months. The mass was as large as a child's head at the seventh or eighth month, it filled the whole of the vagina, and protruded without as seen by the photograph. It was quite friable, easily broken down with the fingers, and was of the ordinary cauliflower variety of malignant diseases. It extended up as far as the posterior fornix of the vagina, without greatly implicating the latter's walls; and examination through the vagina showed the broad ligament to be effected. On account of this latter complication the uterus was not removed, but instead a considerable portion of the tumour was cut away, to the great relief of the patient, and before her discharge from the hospital he hoped to remove still more of it. The interest in the case lies in the size and protrusion of the malignant growth.

Dr. ADAMI referring to this case said that from the distinct cauliflower appearance of the mass one would have suspected epithelioma; sections, however, showed it characteristic of carcinoma instead of epithelioma. It is richly cellular, and most probably originated from some of the mucous crypts rather than the epithelium of the cervix.

Blue Colouration of the Urine following the use of Methylene Blue.—Dr. ADAMI exhibited several specimens of urine of a deep bluish green tint, from a patient under the care of Dr. Roddick. She was a Jewess, aged 63, and came complaining of a sore, with swelling, upon the leg. She stated that she was diabetic, and upon bringing a sample of her urine, Dr. Roddick thought that the bottle was not clean, but he was informed by the patient that a physician in New York had been treating her for some "internal trouble," giving her small pills, after which the urine was invariably blue for some time.

The urine was submitted to Dr. G. C. L. Wolf for analysis who reports as follows:—Fluid of a bright bluish green colour; odour of phenol; acid reaction; specific gravity 1032; urea, 1.15%; glucose, 5.87% (28.16 grains per ounce).

On making an examination to ascertain the nature of the colouring matter, Dr. Wolf found that by treating with strong HCl., the colour was to a great extent discharged ; on treating with chloroform the colour was taken up by the solvent ; silk was unaffected, but cotton, wool, and especially cork wood, were well stained. On examination with the spectroscope, the urine showed a broad band in the red at 70° on Zeiss' scale, when 60 was placed in the first oxyhæmoglobin line. Solutions of various blue dyes with urine were made up and with methylene blue a band was obtained in precisely the same position. The urine showed no bands before and after E., which would lead to a suspicion of Indican colouring matters. The conclusion, therefore, was that the colour of the urine was due to methylene blue, and the assumption followed that this was the drug prescribed by her physician in New York. Dr. Adami stated that Dr. Wolf had called attention to the fact, that as pointed out in a recent number of the *Journal of the Society of Chemical Industry*, if glucose be heated with methylene blue, the colour disappears. He found that upon keeping this blue urine in a sealed tube, it became slowly decolorized. This may be taken as an additional proof, if such were needed after the admirable proof already given by him, that the colouring matter in the diabetic urine was methylene blue.

Stated Meeting, June 15th, 1894.

James Bell, M.D., President, in the Chair.

Carcinoma of the Rectum.—Dr. Williams reported the case for Dr. Kirkpatrick. Mrs. M., aged 39, admitted to the General Hospital on May 29th. For one year she had suffered from irregularity of the bowels and pain during defecation. For the past two months she had suffered from persistent diarrhœa, otherwise her general health had been good. Examination revealed a stricture of the rectum, about 2 inches above the anus, impassable to the

tip of the little finger, felt smooth and hard, and did not bleed. By vaginal examination the mass could be easily detected. On June 11th, the patient was etherised, and the stricture was incised along the posterior part with a blunt pointed bistoury, and dilated. The bowel was then irrigated with a warm boracic solution, and a large rubber tube wrapped about with iodoform gauze inserted. The patient sank and died nine hours after the operation.

Owing to the smooth fibrous surface of the lower end of the mass, Dr. Kirkpatrick was at first disposed to regard it as a syphilitic stricture. However, after a more thorough examination under ether, especially noting the totally different character of the upper portion of the mass, he was satisfied of its malignant nature.

Dr. ADAMI had found at the autopsy an irregular rent 4 cm. long, in the anterior wall of the rectum through which fluid had passed into Douglas' pouch. The abdominal cavity contained 24 ounces of fluid of a light brown colour. The lower portion of the rectum was thickened and constricted for 5-8 cm of its length, with the mucous surface rough and nodular. The growth extended back towards the sacrum, but did not involve the uterus or bladder. Microscopic examination showed the growth to consist of small round cells and spindle cells, with large amount of connective tissue, infiltrating the mucous and submucous coats lying between bands of muscle fibres and extending to the peritoneum. In places there was considerable destruction of the mucous membrane. The diagnosis was that of schirrus cancer, which is thought to have originated in the submucosa, and spread to neighbouring tissues.

Dr. JAS. BELL—Wished to know if the microscopic appearances in this case were definitely characteristic of carcinoma. Even in case they were, he would be still inclined to doubt its cancerous nature in the face of the clinical history and physical appearances of the condition. A young woman, only 39 years of age, in good health, with the exception of a diarrhœa which does not appear to have

caused much wasting, is not a likely subject for cancer. The only physical sign present was the very marked stricture of the rectum, and when this was laid open no tumour was found surrounding it. The speaker directed the members' attention to the bowel now before them, and pointed out that there was no mass in it, neither had it anything which gave one the characteristic feeling of cancerous infiltration. In the presence of such evidence, contra-indicating cancer, he thought we were not justified in making a diagnosis on the microscopical evidence alone. Such conditions are often the result of syphilis, and are amongst the manifestations of that disease which do not yield to treatment. He had seen four cases of this kind within the past year; two of which he operated upon by excising portions of the bowel. In the first case he excised about four inches, in the second a little less, and in both he was rather surprised and disgusted upon finding after excision how little real infiltration or tumour there was. Before the operation, upon examining the bowel, one got this feeling of stricture and hard infiltration, but after its removal the condition noticed was just like what is seen in this case—no real thickening, no mass or neoplasm. Both of his specimens had been submitted to Dr. Adami, who had not been able to arrive at any satisfactory conclusion, beyond the fact that the specimens were not cancerous and showed evidences of some chronic inflammatory change. A third case died in the hospital with extensive ulcerations throughout the intestines. The fourth case he saw quite recently, and had the characteristic appearances of syphilis about the buttocks and anus. In all these four cases, Dr. Bell expressed himself as convinced that he was dealing with syphilis, although at the time in none of them had he made that diagnosis. The two cases which he operated on last fall, have since done well, which would not be the case had he been dealing with cancer. His first patient has had a return of the same condition as well as some similar growths about the margin of the anus

which have been treated with caustic, etc., but he has not lost flesh, although suffering from diarrhœa with mucous stools, sometimes slight hæmorrhages, and tenesmus. The second case has had no return, and is doing very well.

Angiomata of the Colon.—Dr. WILLIAMS next presented a portion of the descending colon with microscopical sections of some angiomatous growths affecting the same, which were obtained by Dr. Adami at a recent autopsy.

Dr. ADAMI found upon opening the abdomen that the great omentum was collected in a mass beneath the left hypochondrium and was of a grayish turbid appearance. The intestines were somewhat reddened, and showed scattered over the serous surface, especially upon that of the transverse colon, numerous minute ecchymoses. The descending colon was of a deep bluish black colour and had a peculiarly dense feel.

On section there was evidence of inflammation throughout ; most marked in the descending colon, commencing at the splenic flexure. At this point a band of adhesions having formed, produced a second flexure, and below this the organ was contracted, with thickened walls, and of a dark congested appearance. In its walls were observed about a dozen brownish bodies, averaging 1.5 cm. in diameter, and projecting from the mucosa, producing a considerable constriction in the gut. On microscopical examination of one of these nodules the mucous membrane was found raised up ; the angiomatous growth is in the submucosa and is of the hypertrophic and capillary variety ; the muscular coat was drawn in into the centre of the nodule, at the apex of which, hæmorrhages frequently occurred. The surrounding tissue was thickened and contain a quantity of fat.

A Case of Infection by the Bacillus Pyocyaneus.—Dr. WILLIAMS reported the following case .

A child five months old, an inmate of the Montreal Foundling and Infant Nursery, who had previously been

well, and nursed by a healthy mother, began without any apparent reason to fail.

For two months he steadily lost weight, became restless and seemed to suffer from abdominal pain. When Dr. Williams saw him he appeared listless and moaned when the abdomen was touched. There was a small group of purple papules on either side of the umbilicus. The abdomen was relaxed and the skin dry. Diarrhœa with greenish stools had been present for some time and there was a slight fever (99°-100°).

These papules increased in number, became of a deeper blue colour, and spread to the chest, shoulders and thighs: the abdominal pain ceased, but the child became worse, The limbs were rather stiff, flexed, the child seldom moved, and cried when the limbs were extended, while they at once became flexed again. Dr. Kenneth Cameron then took charge of the Nursery and noticed that during three days preceding the child's death hæmorrhages occurred from the nose, from between the toes and from abraded papules on the thigh and back. The day before death a slight discharge was noticed from the right ear.

At the autopsy the organs were seen to be pale. Minute petechiae were present in the mucosa of the stomach and intestines, but no hæmorrhages had occurred into these organs. There were two hæmorrhagic infarcts in each kidney and one on the heart.

Cultures prepared on gelatin from the spleen, kidney, liver and blood, and kept at the temperature of the room, gave in seven days the characteristic growth of the bacillus pyocyaneus.

Careful cultivation showed this to be a pure growth, and after various media had been satisfactorily tried, a rabbit was inoculated with 0.5 c.c. of a broth culture.

The animal had diarrhœa and stiffness of the extremities; became comatose and died in forty hours.

On examination, punctate hæmorrhages were found in the mucosa of the stomach and intestines, and the bacillus

was found in the various organs and in the intestinal contents and urine.

Microscopic sections of the liver, spleen and kidneys, showed the bacilli in large numbers in the small blood vessels and about the capillaries causing numerous minute thrombi and commencing parenchymatous degeneration.

The case appeared to be of interest, as he had been able to find but three other cases reported of primary infection by the bacillus pyocyaneus alone. These were by Neumann and Ehlers. They all occurred in children and were similar in nearly every respect, except in the character of the eruption, which from the papular form became bullous and pustular, the contents developing in time a blue colour.

There had been a number of cases where the bacillus had been found associated with other micro-organisms, especially in suppurating wounds, erysipelas, etc., and in one instance after enteric fever. But one writer in English, H. C. Ernst, had mentioned finding the bacillus. He records a case where it occurred in the pericardial fluid, associated with the tubercle bacillus, although from its large size and slight modifications in colour production he had considered it another variety of the B. pyocyaneus.

Dr. Williams expressed his sincere thanks to Dr. Adami for his kind assistance in the bacteriological work and in investigating the literature of the subject.

Dr. Adami thought this was a singularly interesting case, as it is the first of the kind reported in America. Several cases have occurred in France ; two in Germany, and two in Copenhagen, where the bacillus has been found pathogenic. The attention of pathologists was first directed to this organism by the occurrence from time to time of a blue color in the dressing from suppurating wounds, and which was formerly supposed to be due to the presence and reaction of iodine on starch in the bandages. The investigations, however, of Gessard and others, proved this blue colour to be due to the growth of a little bacillus, which was so short as to be sometimes mistaken for a micrococus.

The blue colour, moreover, was found not to be due to the bacillus itself, but to a secretion produced by the bacillus; and this blue pigment was further shown to be a combination of several pigments, blue, green, and red, all of which have been isolated and given separate names, such as pyocyanine, pyozanthin, etc. Speaking of its pathognomonic qualities, Dr. Adami said that in man it is most commonly found on the surface of wounds, and ordinarily is not virulent enough to cause death. As Dr. Williams mentioned, it is seldom a primary affection, and has heretofore been chiefly regarded as a disagreeable complication, rather than as a disease in itself. Some workers in this field, however, having obtained pure cultures of the bacillus, inoculated rabbits with them, and studied the effects. After large doses the animal suffers from severe diarrhœa and hæmaturia, grows gradually comatose and dies within from 24 to 40 hours. Autopsies reveal hæmorrhages throughout the various organs of the body. When smaller doses are given, the animal emaciates, has a diarrhœa, and dies from a kind of ascending paralysis. It is only the young and very feeble of the human family that seem to be susceptible to general infection from this microbe, such as occurs in the rabbit; and it is of interest to observe that when a case does occur a parallelism between the symptoms in the two animals exists. There is the same diarrhœa, the same weakness or prostration, and the same hæmorrhages both mucous and cutaneous. It is quite possible that such cases are more common among children than is generally supposed.

Dr. Kenneth Cameron thought that the cutaneous hæmorrhages which occurred between the toes were of interest, as there had been absolutely no injury to account for their appearance; they seemed to be simple extravasations of blood. He regretted very much that neither the blood nor the urine had been examined during life. A case with an almost exactly similar eruption occurred in the nursery about a year ago, which proved fatal, but the autopsy showed no hæmorrhages of the internal organs. No bacteriological examination had been made.

Dr. REED asked if there was any theory as to how the bacillus had obtained an entry into the body.

Dr. WILLIAMS, in reply to Dr Reed's question, thought that aside from the infection through a wound, the alimentary tract might be the most likely point of entrance, and mentioned a case reported by Oettinger where a young man, 18 years of age, convalescent from typhoid, suddenly developed a fever, with some other symptoms unlike those of the previous illness, and on examining the stools this bacillus was discovered. He recovered.

Mycetoma Pedis—Madura Foot Disease.—Dr. WILLIAMS read for Dr. Kirkpatrick the following report and exhibited the specimen.

Xavier Lecompte, æt 21, a French-Canadian, was born in Montreal, and has always lived here with the exception of five years which he passed in Ontario between the age of twelve and seventeen.

His parents, three brothers and four sisters are living and in fair health. No history of tuberculosis can be obtained.

At the age of eleven, a bluish spot appeared on the inner side of the foot which gradually increased until it became the size of a five cents piece. One day while walking he struck the foot, breaking open the spot, from which a little blood escaped. After this the spot disappeared.

A few months later, what he described as a button of flesh (un bouton de chair), appeared on the sole of the foot between the first and second metatarsals, which was later on removed, leaving a little hole which ultimately healed. Three years later a similer growth appeared on the dorsum of the foot directly opposite to where the other nodule had been on the sole. Two years after he struck the foot with an axe, bruising it severely, and ever since the foot has remained swollen and tender, though he was quite able to walk until last fall, when the condition became very much aggravated, the nodules appearing all over the foot.

The discharge from these sinuses has always been scanty

and of a thin purulent character. He came to the General Hospital where, as the foot seemed useless, it was amputated.

Dr. ADAMI remarked that in the pressure of work he had delayed the examination of the foot until that afternoon when first he heard that it was to be brought before the Society that evening.

On proceeding to examine it he was immediately struck by the resemblance between the general appearance of the amputated foot and that of cases of madura foot. There were the same button like elevations of the skin scattered over the surface, and at their centres the same fine sinuses leading deep down into the interior of the foot, while by pressure upon the buttons there was extruded a thin pus containing characteristic yellowish gray bodies. Upon studying the discharge under the microscope, and again upon examination of sections the structure of these bodies could be clearly made out. They clearly resembled in general appearance the ray fungi of actinomycosis, forming lobate masses of varying size, the larger being easily distinguished by the naked eye, some indeed being as big as small shot. Like actinomyces, the masses showed a radiate arrangement of filaments or clubs all around the periphery, with a central irregular network of filaments: unlike actinomyces the clubs were so large that they could be recognized by the low power of the microscope (Zeiss A), and under the high power there was a marked tendency observed for the clubs to bifurcate. In the sections the masses could be seen surrounded by collections of leucocytes, so loose that unless special precautions were taken, the fungi fell out. These appearances tally entirely with the very full description given by Kanthack in the *Journal of Pathology*, Vol. I. Whether this is a species absolutely identical with the Indian form can only be determined by comparison of material. The clinical history, and the hurried examination so far made, point on the whole to this being a case of true madura foot, and to the species associated with the disease being one and the same.

Dr. Adami pointed out that as in the previous case so here he had brought before the Society what, to the best of his belief, was the first case of the kind reported in any English speaking country.

The disease of 'madura foot' occurs with fair frequency in certain parts of Hindustan, but outside of India is very rare. A case had, he thought, been reported in Italy, another more recently in Algiers, where Vincent had been able to gain a pure culture of the fungus, another in Germany. The characteristics of the disease, which has been recognised for the last thirty years, are its chronic nature, its limitation to the lower extremities and the development of numerous sinuses. More recently attention has been called by VanDyke Carter and others to the constant presence of peculiar bodies in the discharge. These are either black or yellow, and as already indicated Kanthack has conclusively shown them to be closely allied in structure to the actinomycosis fungus. The disease would seem to be most common in countries where the inhabitants go about barefoot; it was noticeable that though in Canada it is not the habit to do so, the disease in this case was contracted during childhood, that is to say, during the period of frequent barefootedness.

Dr. Gordon Campbell pointed out that in Crocker's work on the Diseases of the Skin there was a reference to a previous case of madura foot reported from America. He did not think that any details were given.

Stated Meeting, June 29th, 1894.

James Bell, M.D., President, in the Chair.

Dr. Bell presented the following specimens:

(1) A large concretion which he had recently removed from the bowel in a case of appendicitis. The patient was 47 years of age and had a bad history of recurrent attacks at intervals of three or four months for the last 21 years. The last attack

occurred eight weeks before coming under observation, and it was then for the first time that he noticed any mass in the abdominal wall. This mass was in the situation of the appendix and about the size of a hen's egg, it was very hard and very clearly adherent to the abdominal wall, was quite tender to the touch, and on walking he suffered a dragging pain. Operation was advised and accepted by the patient and was carried out in the usual way. The incision was made to the inner side of the mass, which was then carefully dissected away from the abdominal wall to which it was attached by very firm adhesions. The free surfaces of the cæcum and the lower end of the ileum were found to be adherent and in the adhesions were enclosed in a hard mass and the base of the appendix. The free end of the appendix projected about an inch and a half. On separating the ileum and the cæcum it was found that the greater part of the dilated proximal end of the appendix had been absorbed (or destroyed by ulceration or gangrene), and that the concretion communicated with the lumen of the bowel on each side. The appendix and the concretion were removed and the two portions of bowel re-united by suture. The concretion, which was about the size of a horse-chestnut, had been submitted to Dr. Ruttan for chemical examination. The patient made an uninterrupted recovery. The case, Dr. Bell thought, was of interest as illustrating one of the unusual and complicated conditions one may meet with in operating for appendicitis.

(2) *Sarcoma of the Upper Third of the Tibia.*—The specimen had been removed that day from a girl 23 years old, with a tubercular history. The tumour was first noticed two and a half years ago, but emaciation had only become marked during the past eight months. The amputation was performed in the middle third of the thigh.

Chloroform Accident.—Dr. Bell next gave the history of a chloroform accident which occurred recently in his hospital practice, and which came very near adding one more victim to the fatalities of chloroform anæsthesia. On Thursday of last week a boy eight years old, suffering from caries of the lower dorsal vertebræ with psoas abscess, was prepared for operation. He

had been in the hospital one month prior to this, during which time he appeared in good health, there was no fever, and with the exception of this spinal condition his organs were all sound. (Dr. Bell then read the report of the anæsthetist.)

Commenting on the report, the speaker remarked that it was impossible to say whether the pulse or respiration were the first to cease, as almost at the same moment that Dr. Shaw discovered the stoppage of the pulse, Dr. Davidson observed the respirations to cease with a long-drawn sigh. Inversion, artificial respiration, cold to the face, with hot cloths over the cardiac region were all resorted to, and it seemed minutes to the observers before any return of respiration or cardiac movements manifested themselves. He thought that this case demonstrated the fact that the heart does stop suddenly in chloroform poisoning, in some cases, at least, and that death is not always due to respiratory failure brought on by the administration of an excess of the drug. Had respiratory failure been the initial event here the heart, as in all cases of death from suspended respiration, such as drowning, hanging, choking, etc., would have gone on beating for some minutes, instead of stopping instantaneously as here. The converse, however, is not true; that is, respiration does not continue after an arrest of the heart's action; and considering these facts, it seems clear that in this case the effect of the chloroform was exercised on the heart primarily and solely, the stoppage of respiration being secondary to it. Moreover, the quantity of chloroform administered was too insignificant to be capable of affecting the respiratory centres, as in less than half a minute before the accident the boy cried out "take it off my face," and only a few drops were given afterwards. An interesting feature in the case is that it contradicts the contention of the Hydrabad commission that the heart never stops first, but that death from chloroform is always the result of respiratory failure from not giving the drug properly.

Dr. SHEPHERD thought there must be two classes of cases in chloroform poisoning. He had a case last winter where he was operating for lupus of the face, in which chloroform was used, and in which the respirations stopped while the heart went on beating.

Dr. Gordon Campbell believed that the preponderance of clinical evidence is in favor of the heart stopping first. He then wished to know if the boy was much alarmed. Dr. Bell replied in the negative, saying that he was exceptionally free from fear.

Dr. Wesley Mills said that most of the upholders of chloroform as an anæsthetic were simply blinded by their prejudices, and were incapable of seeing or believing any facts, no matter how well substantiated, detrimental to the reputation of this drug. He instanced the fact that Surgeon Major Laurie had quoted the report of the chloroform commission as being entirely in favor of his pet belief, while, in fact, it contradicted it. And such is the attitude of a majority of the defenders of chloroform who belong to what is known as the "Syme school," and to any experience establishing untoward effects their reply is simply "You do not give it properly, if you had done so the accident would not have happened."

Dr. Gordon Campbell agreed with Dr. Mills in his strictures on the men of the "Syme school." He said they were accustomed to state that ether was only used by second-rate surgeons, and that it only effected incomplete anæsthesia.

The late Dr. Fenwick.—The following resolution was moved by Dr. Shepherd and seconded by Dr. Mills:

Resolved—That this Society has learned with the most profound sorrow and regret of the death of Dr. George Edgeworth Fenwick, one of its foundation members and a past president. For many years a most active and valued member, beside taking a prominent part in the discussions, he contributed numerous important papers to the proceedings and exhibited numbers of very valuable pathological specimens.

He was widely and favorably known, both in Canada and abroad, as a most accomplished, original and daring surgeon, who helped to advance surgical science in various directions, but especially in the surgery of the joints.

In Canadian medical literature he always upheld the best interests of the profession by protesting against abuses and advocating reform.

His kindly, genial manner and goodness of heart endeared him to all his brethren and especially made him the friend of the young practitioner.

Resolved—That our deepest sympathy be conveyed to his sorrowing family in this their time of mourning.

Stated Meeting, September 21st, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

A Case of Symphysiotomy.—Dr. J. C. CAMERON presented a rachitic dwarf, upon whom he had recently performed this operation for the relief of convulsions. The patient was 26 years of age, height 4 ft. 6 in. and weighed 84 pounds. The conjugate was 6.8 cent. Delivery was accomplished fifteen minutes after the commencement of the operation, the child being alive and weighing four pounds. The stitches were removed on the eighth day, the union being perfect, there being no moving or riding of the bones. The woman was now brought before the Society for fear she might be lost sight of after leaving the hospital, but a full report of the case will be given at a later date.

Old Dislocation of the Hip-Joint Treated by Resection.—Dr. BELL presented a little girl aged six, who had suffered from spontaneous dislocation of the left hip-joint during an attack of scarlatina and had been treated six months later by excision of the head of the bone and clearing out the acetabulum. She contracted scarlatina in January, 1894, and was put to bed with her limbs in a perfectly normal condition. When convalescent in the month of February and without having met with any accident or presented any symptoms, it was observed that the leg was deformed and that she was unable to stand upon it or to use it. A physician was called (not the one who had diagnosed the scarlatina), who easily recognized a dislocation upon the dorsum of the ilium. Several attempts at reduction

having failed, she was brought to the Royal Victoria Hospital in July, where she was chloroformed and unsuccessful attempts made at reduction. On the 17th of July the head and neck of the bone were exposed by incision. One-third of the globular head was worn away where it lay upon the ilium above the brim of the acetabulum. The capsular ligament could not be recognized posteriorly and the acetabulum was practically obliterated with fibrous material. There was no ligamentum teres. The limb could not be sufficiently extended to replace the head in the acetabulum and extend the limb. The muscular resistance seemed to be general. (There was $1\frac{3}{4}$ inches of shortening with the limb brought down as well as possible.) There was no sign of inflammatory or other pathological change. The head of the bone was excised and the acetabulum cleared out, when the limb fell easily into position. The patient made an uninterrupted recovery, the wound healing by first intention. The limb remains in normal position. She has free movement in every direction and a good strong limb and there is half an inch of shortening although from the tilting of the pelvis it seems greater.

Resection of the Intestines.—Dr. SHEPHERD exhibited two cases in which he had resected the bowel.

Case I.—This case was shown to the Society soon after operation three years ago, and she was now again brought before the Society in order to show in what a good condition she was. The resection was for stenosis following strangulated hernia, for which operation had been performed. At the time of operation the gut had looked suspicious, but was returned, more sloughing occurred and this was followed by the stenosis for which resection was performed. Several inches of the bowel had been removed and the cut ends sutured end to end by an inner row of interrupted silk sutures passing through muscular and mucous coats and an outer row of Lembert's sutures through the serous coat. The patient recovered well and when shown appeared in good health. Her age is 56.

Case II. —This was a case of resection of nine inches of small bowel in a woman aged 40. The bowel had been strangulated for five days and was found gangrenous at the operation for the relief of the strangulation. As the patient's condition was fairly good, immediate resection was performed. The cut ends of the bowel were sutured by two rows of continuous sutures, the inner row passing through the mucous membrane and muscular coat and the outer, a continuous Lembert, through the serous coat. The hernia was an inguinal one, and after suturing the bowel a radical cure was performed by excising the sac and obliterating the inguinal canal. The patient got well without a bad symptom and the bowels moved naturally on the fifth day. She went out in four weeks perfectly well. It was now six weeks since the operation. Dr. Shepherd remarked that it was now his custom to use the continuous suture, and that he used no plates or other apparatus. The suturing of the bowel did not take very long, some twenty minutes. It was his experience that the divided mesentery gave most trouble on account of the hæmorrhage and its liability to tear. He was strongly of opinion that immediate resection was the best treatment in all cases of gangrenous hernia where the condition of the patient was good ; in other cases it would be the better treatment to open the bowel and form an artificial anus, which could be closed by a subsequent operation.

A Case of Pylorectomy.—Dr. ARMSTRONG exhibited a woman from whom he had recently excised the pylorus. She came to the Montreal General Hospital on the 10th of May, 1894, complaining of a tumour situated in the right hypogastrium just below the seventh, eighth and ninth ribs, associated with pain and nausea after eating. Wishing to gain some accurate knowledge of her gastric condition, Dr. Armstrong sent her to the medical wards under the care of Dr. Lafleur, who made the necessary investigations.

Dr. LAFLEUR had first seen the patient in the out-door department, and under the impression that it was a case of

malignant growth of the pyloric extremity of the stomach and of a kind suitable for operation, he sent her upstairs to Dr. Armstrong, who confirmed this view, but returned her to the medical department for further information as to the functions of her stomach. Her history was as follows: In December, 1893, she began first to feel out of sorts, without, however, any definite stomach symptoms. In January, 1894, there was pain in the epigastrium after eating. February, 1894, the pain persisted, but was regularly relieved by an attack of vomiting coming on two hours after eating. She grew slowly weaker and by the end of the month had to take to bed. These conditions persisted during the following March and April, accompanied by a steadily progressive loss of flesh. She lost 37 pounds from the beginning of her illness until the date of her appearance at the out-door department of the hospital. She was a dark woman, much emaciated, but with her muscles still in fairly good condition. Examination of the respiratory, circulatory and urinary systems proved negative. The digestive symptoms were poor appetite, bad taste in the mouth, constipation, pain in the stomach and vomiting after meals. Physical signs as detected under examination in the ward were enlargement of the stomach, ascertained by means of the peristaltic waves observed to traverse from left to right. The boundaries were above, extending on a line with the ninth costal cartilages on both sides, and below, reaching as far as the umbilicus, typical hour-glass contractions of the stomach were at times noticed. There was a hard tumour about the size of a hen's egg, movable in every direction except downwards, and varying greatly in its situation. No contractions could be observed in this tumour and percussion gave a dull note. It was continuous with the funnel-shaped outline of the stomach. No nodules were observed. On May 19th a test breakfast, consisting of a small piece of bread and a cup of tea without milk or sugar, was given and withdrawn one hour afterwards, the examination of its contents revealed a complete absence

of free hydrochloric acid, the gastric juice seemed effective, but lacked the presence of the acid. The want of this latter constituent seemed to be the chief abnormal feature. A few days later a second meal was administered, which confirmed in every way the first. From a medical standpoint the chief interest in the case was the probability of its proving a suitable one for operation, owing to the complete absence of adhesions, as evidenced by the extreme mobility of the tumour and absence of all indication of involvement of the lympathic glands. The rule that abdominal tumours are always larger when exposed than they appear from external examination was contradicted in this case. There was no appreciable difference between its real size and that which we supposed it to be before opening the abdomen.

Dr. Armstrong said that the patient having returned to the surgical ward, the question of surgical interference with all its attendant dangers was put before her to decide. So miserable was her condition that she preferred death to a continuance of life under such circumstances and gladly chose the risks of an operation. Before anæsthetizing her a hypodermic of morphia and atropia was administered, with a view to lessen the shock of the anæsthetic, and it had very satisfactory results. She took the ether quietly, there was no vomiting, and only 6½ ounces were used in the two hours she was under its influence. Her pulse which was 100 at the start, fell to 70 before she left the table. A median incision was made and the tumour brought up to the opening. It was small and well defined, quite movable, non-adherent to surrounding organs, and there seemed to be no infiltration or involvement of any of the surrounding parts. It seemed a very suitable case for removal of the growth. The greater and lesser omenta were tied off, the pylorus drawn well up and the duodenum constricted by a soft rubber band at a point about 2½ inches from the pylorus. An incision was then made across the stomach well above the tumour, taking care to have it include all infiltrated tissue; and the duodenum was then

cut across well below the tumour. A hole was then made in the posterior wall of the stomach and the duodenum united here, instead of the usual method of joining it to the head of the organ. In this way he was enabled to work right inside the stomach in the process of uniting the duodenum, which obviated many of the mechanical difficulties, and after joining it from the inside the stomach was turned over and the parts further united on the outside by a Lembert suture. The end of the stomach itself was then closed up, the edges being inverted, united, and the serous coats being finally joined by two rows of Lembert's sutures. Her recovery was as smooth as possible, there being neither pain nor vomiting. Solid food was first administered on the fifth day and she has been taking it ever since. She was last weighed about two months ago and had then gained ten pounds and has been increasing in weight ever since. She looks well nourished and says her appetite is good.

Dr. SHEPHERD congratulated Dr. Armstrong on the success of this extraordinary operation. It was, so far as he knew, the first of the kind ever performed in Canada, and was, without doubt, the first in Montreal. He had seen the patient after the operation, and looking at her now he must say he had never seen a case do better, which, when we consider the seriousness of the condition, is saying a great deal. He thought much of the rapid improvement may be attributed to the early feeding, as, in his opinion, the patients in many of the older cases owed their deaths to the starvation which was enforced. Dr. Armstrong's procedure in bringing the duodenum through a separate opening into the stomach is regarded as the only proper method by European surgeons.

Dr. RODDICK joined with Dr. Shepherd in congratulating Dr. Armstrong on his success in this case. Early feeding, without a doubt, contributes largely to the success of these cases.

Dr. JAMES BELL said that the trouble with these cases is the fact that most of them only submit to operation when they are practically moribund and when the disease has

consequently made such progress as to render a cure under any circumstances almost hopeless. He had more than once opened the abdomen in cases of this kind only to find the disease so advanced that, unless for the relief of a stricture or some such mechanical difficulty, an operation was unwarrantable.

An Appendix Containing an Ordinary Pin as the Exciting Cause of a Perforating Appendicitis.—Dr. Bell presented the specimen and gave history. The patient, a boy, aged six, had been brought to the Royal Victoria Hospital with the usual symptoms and signs of appendicitis with abscess formation. There was a history of two day's illness. The child was operated upon and made a good recovery. On slitting up the appendix a pin was found lying transversely across its lumen near the apex. The head of the pin had perforated (by ulceration) all the structures of the appendix, and the point of the pin had very nearly perforated at the opposite side, and at this point the appendix was strengthened by a mass of adherent omentum. This was the only case which Dr. Bell had seen with an actual foreign body as the exciting cause of the disease—except possibly a foreign body may have been the starting point of some of the enteroliths so frequently found in the appendix.

Calcareous Tumour of the Thyroid Producing Œsophageal Obstruction.—Dr. Bell showed the specimen and reported the case. An old lady, aged 58, had suffered for two years and a half from difficulty in swallowing, gradually growing worse until she was actually starving. Since March last she had not been able to swallow solids at all, and liquids only in very small quantities, and with the greatest difficulty. She was greatly emaciated and very weak. She was short of breath on excitation and also had one or two severe attacks of dyspnœa. A small hard nodule was felt above the right sterno-clavicular articulation, and she stated that she had suffered from goitre when a young girl, but that it had gradually disappeared. The diagnosis was substernal calcareous thyroid tumour, and operation advised. Enu-

cleation was not difficult and not attended with haemorrhage, the patient made a rapid recovery and is now swallowing quite well. The tumour, which was about the size of a hen's egg, was conical in shape and flattened against the sternum and sternal end of the clavicle. The apex had apparently pressed against the œsophagus. In structure it resembled one of the tarsal bones (excepting the articular surface) having a smooth outer surface resembling compact bony tissues, and cancellated structures internally. The operation was performed on the 13th of August last.

Tumour of the Prostate.—Two specimens were presented by Dr. BELL and brief histories given. The first was from a man, aged 58, who had suffered for ten years, with symptoms of prostatic obstruction. For the first six years he had suffered greatly, and in March last he had had a large calculus removed by lateral lithotomy, which gave a measure of relief, but this was only temporary. On examination several stones were found in the bladder and supra-pubic section was advised for the removal of the calculi, and subsequent prostatectomy if thought necessary or desirable. On section, five (5) smallish stones were removed and the projecting prostate enucleated. Several deep sloughy ulcers were found, apparently due to the pressure of the calculi, and prostatectomy was decided upon. Only the projecting part of the prostate was removed by enucleation, and the patient made an excellent recovery. He is now perfectly well, has good bladder function (although there is some residual urine), and is quite free from pain and frequent desire to micturate.

The second case was an old, decrepit man of 68, who had suffered for a great many years, but for the past year his sufferings had been so great that he declared that life was intolerable unless he could be relieved. His urine showed no evidence of kidney disease, and after due preparation the prostate was enucleated by the suprapubic route. The points of interest were the great ease with which the bladder gland was enucleated in its entirety, (making an unique

specimen) very rapidly, and without hæmorrhage or shock. On the third day the patient began to grow dull and stupid and died on the fourth day toxæmic. At the autopsy a few spots of very recent lobular pneumonia were found in the left lung, but the organs were otherwise healthy. The bladder was also presented, showing the capsule from which the prostate had been removed. Urine had flowed freely from the bladder wound, showing that there was no arrest of kidney function. In both these cases the after treatment consisted in irrigation every three hours with boro-salicylic solution through a catheter introduced into the bladder by the penis, the out-flow being through the bladder wound. Dr. Bell expressed the opinion that the operation of the future would be enucleation from the perineal side, and that this could best be carried out by means of combined supra-pubic and perineal incisions.

Dr. SHEPHERD had a somewhat similar case to the first within the past few months. A man came from the country who had been sounded many times for stone without success. Dr. Shepherd was also unsuccessful until he examined him under ether. There was no sensible enlargement of the prostate. A supra-pubic section was made and two very rough stones were found lying in the bladder Wherever they had come in contact with the bladder wall a sloughing ulceration had taken place. He treated the ulcers with caustic without interfering further with the prostate. This was the first time that he had ever seen such a condition of the bladder in connection with stone ; but it may be that they are more frequent than we think, as it is not possible to see them during the lateral operation, even when looked for.

Dr. RODDICK believed in removing the prostate by a perineal opening. He had removed diseased glands on two or three occasions by this method, and was surprised how easy it was to shell them out. He had no doubt that it would in time become the standard method of removing the prostate.

Dr. ARMSTRONG had recently seen Prof. MacEwen, of

Glasgow, remove a prostate, and had a talk with him on the subject afterwards. Some time after the Leeds meeting of the British Medical Association the professor had discarded the perineal method and adopted the supra-pubic, as there advised. His results, however, were exceedingly bad. One after another of his patients died of toxæmia and hæmorrhage, until he finally went back to the perineal method, which plan he now almost without exception adopts. Sometimes when only one lobe is enlarged, he will remove it through a lateral incision. In the perineum, he exposes the prostate by a U shaped incision, and enucleates it without opening the mucous membrane of the bladder. In this way he avoids toxic troubles and can control hæmorrhage by packing. It seems very desirable that we should get some better method in prostate surgery than the supra-pubic one, and we would then be in a position to relieve a large class of people who now suffer from prostate disease in its last stage.

Dr. Bell often supplemented his supra-pubic incisions by a perineal drain. This in many instances did not appear to cause any improvement in the results, and he found it hard to believe that the difference between the two methods can be so very great. Again it is often very difficult to enucleate by the perineal method without injuring the mucous membrane of the bladder over the prostate. His idea of late has been a double incision—supra-pubic and perineal—so that instead of enucleating from the bladder only, one could enucleate from the perineum with the fingers in the bladder as an aid and guide to the performance.

Four Calculi Weighing 5 ounces 1 drachm Removed from the Bladder.—Dr. Roddick exhibited four remarkable calculi, removed from a man, 65 years of age, who had been for four or five years suffering from bladder symptoms. During that time he had been several times sounded for stone, the last occasion being not more than three months ago, but without any signs of such a condition ever being detected. Enlarged prostate with symptoms arising there-

from was looked upon as his disease. Dr. Roddick, on examination, succeeded in diagnosing the presence of a fairly large stone, the size of which, in fact, made him conclude it was the only one. The existence of an enlarged prostate, and the unhealthy condition of the bladder, decided him to choose the supra-pubic method. On making his incision, a large stone presented in the wound, which on being removed was succeeded by another, and so on until four large ones were removed, weighing in the order of their size 37, 38, 39 and 50 grammes respectively. Two of them must certainly be looked upon as very large, and considering the combined size as well as the circumstances of the history, the case is altogether a very remarkable one. The failure of the previous surgeons to detect stone by sounding is explained by the fact that the calculi were all lying in a distinct sac, or pocket of the bladder; the examinations no doubt were made with the bladder empty, and its mucous membrane folding itself over the stones, deadened the touch of the sound.

Cases of Cholecystotomy.—Dr. SHEPHERD reported two cases performed during the last six weeks. In the first case the patient was a woman and aged 36 years. For two years she had suffered much pain about the right hypochondriac region, the first attack of pain being accompanied by profuse jaundice, which lasted several months and then disappeared. There was always a pain of a dull character in the region of the gall bladder. In February last she had a severe attack of pain, high temperature, rigors, and rapidly became jaundiced. In July, she noticed a tumour to the right of the umbilicus; it was painful and seemed to increase slowly in size up to the time of her entrance into the hospital. All this time she was deeply jaundiced, her urine was dark in colour and her stools were colorless. On examining her, it was noticed that she was very thin and deeply jaundiced. She complained of dull aching pain in the right hypochondrium; had continuous nausea, was feverish at night and often suffered from chills. On ex-

amining her abdomen a round, smooth tumour was felt to the right and below the umbilicus : this was dull on percussion, the dulness being continuous with that of the liver. The tumour was about the size of a small cocoa-nut, elastic and freely movable. Dr. Latleur examined the case and looked upon it as a case of enlarged gall-bladder. The operation was performed on August 30th, and the tumour was found to be a largely distended gall-bladder projecting beyond a "lacing lobe" of the liver ; it was opened and about a pint of thick bile evacuated. A few small stones were found in the gall-bladder, but the cystic duct was not dilated. On examining further, two large stones were found in the common duct, and these were soft and could not be broken up by needle or padded forceps, so the gall-bladder was sutured to the abdominal wound and a glass drain inserted. Patient has gone on perfectly well ever since, large quantities of bile being discharged through the tube into a rubber bag which is attached to it. The patient is up and about and eats well. The jaundice has almost disappeared, but unless something more be done, she will have a permanent fistula discharging bile. Dr. Shepherd said that if the fistula persisted, it was his intention to do a further operation, viz., to re-open the wound and perform a cholecystenterostomy, and then close the present opening in the gall-bladder. In making a communication between the gall-bladder and intestine, it was his intention to make use of the Murphy button.

In the second case there had been severe attacks of pain with jaundice and high temperature for more than a year. The patient was a woman, aged 36, who was somewhat stout. Dr. Shepherd saw her in the last attack and advised her removal to hospital. She had a temperature of 103 —4 , with great tenderness and pain in right hypochondrium and she was intensely jaundiced. She improved immediately on admission to hospital, the jaundice rapidly disappearing. No stones were found in her stools. Although the pain had disappeared there was a point of great tenderness in

the region of the gall-bladder. At her request operation was performed on September 7th to prevent further attacks. An incision was made in the left semilunar line and the gall-bladder searched for: it was hidden by adhesions and situated deeply down beneath a high-placed liver. On opening it a small quantity of bile escaped, and six gall stones the size of marbles were removed: the common duct was free. The gall-bladder could not be brought up to the surface, so a glass drain was introduced and the cavity packed round with iodoform gauze. The wound was closed by three layers of sutures. The patient went on very well. The gauze was removed on the second day and replaced, but a day or two after a severe iodoform rash appeared, so the sterilized gauze was substituted for the iodoform. The tube was removed on the tenth day, the amount of bile coming away having very much diminished. She is now going on well, sitting up and going out. The fistula is rapidly closing, a very small quantity of bile being now discharged.

Dr. Bell also reported a case of obstructive jaundice in which the symptoms pointed to obstruction in the common duct. A woman aged 50 had suffered from pain and disturbance about the right hypochondrium for about eight months. Since March last she had suffered from paroxysmal attacks of pain with some vomiting followed by jaundice, which, although diminishing in the intervals, never entirely disappeared. Later on she had chills and the jaundice became persistent, increasing with each attack.

Diagnosis—Obstruction in common bile duct from gall-stone, or possibly malignant disease.

Operation July 23rd—Incision in right linea semilunaris. Firm, old adhesions made it very difficult to expose the under surface of the liver, so that it became necessary to make a transverse incision from the upper extremity of the vertical one inwards nearly to the median line. The liver was shrunken and retracted beneath the

ribs. The gall-bladder contained no fluid and was contracted upon a stone which lay in the entrance to the cystic duct and was as large as a filbert. Nothing could be detected in the common duct, but a chain of enlarged lymphatic glands were felt in the hepatic fissure. The gall-bladder was incised and the stone removed. A probe forced down the duct failed to enter the bowel. He did not feel that he had removed the cause of the trouble, but being unable to locate any obstruction elsewhere in the biliary passages he could do nothing further. As it was utterly impossible to suture the wound in the gall-bladder, which lay far back and high up underneath the ribs, to the peritoneum lining the abdominal walls, or in any other way establish a natural conduit for the outflow of bile, the wound was closed with sutures, the ends of which were brought up through the abdominal wall to fix it in position. Although there was no flow of bile during the operation it was not thought probable that the wound in the gall-bladder would remain closed, especially as it was impossible to apply Lembert sutures, owing to the fragility of its peritoneal covering. A glass drain was carried down to the line of sutures in the gall-bladder and carefully packed around with iodoform gauze—the idea being that the sutures would probably keep the gall-bladder closed for a couple of days until the track of the drainage tube would become closed off from the general peritoneal cavity by adhesions. This was evidently successful, as there was no biliary discharge from the tube for five days, when bile began to flow in great quantities. The jaundice then began to disappear, but the stools remained colourless and covered with oil globules. Bile continued to flow in large quantities until the 12th of August (20 days after operation), when it rapidly diminished and the stools became normal in colour. Nine days later (August 21st) the wound was perfectly healed, the jaundice gone and the digestive functions normal and the patient was discharged.

The post-operative history of this patient I think, supplies the missing link in the diagnosis. When we remem-

ber that the gall-bladder was empty at the time of operation, that there was a chain of swollen lymphatic glands along the line of the hepatic duct, that bile began to flow from the wound five days after operation and that it ceased to flow through the wound and began to flow through the common duct 20 days after operation, it seems pretty clear that obstruction was due to pressure from the enlarged glands from without and that when the exciting cause was removed and the swelling disappeared from the glands the symptoms all subsided. Dr. Bell knew of no similar case recorded.

Dr. Roddick in April, 1892, had a case of cholecystotomy which he thought worthy of recording, especially so, since he was under the impression it was the first operation of the kind performed in Montreal. A lady, 64 years of age, had been jaundiced for nearly one year, accompanied by pain, etc., and her symptoms had gradually become much worse. Examination revealed a distinct tumour, which had all the signs of being a distended gall bladder. An incision confirmed this fact, an enormously distended gall-bladder being found, containing about one pint of thick treacly looking bile. A conical shaped stone, about the size of a filbert, was found blocking the cystic duct ; and along the line of the common duct a distinct thickening was felt, but whether of a simple or malignant character could not be ascertained. The size of the gall-bladder made it an easy matter to bring it up to the abdominal wound and suture it there, a drainage tube being inserted for the escape of the bile. A few days after the operation, the jaundice disappeared, showing that the common duct, to a certain extent at all events, was patent. Jaundice, however, returned after a time, and in a more aggravated form. Bile continued to flow through the abdominal wound for nearly three months, sometimes very little, and sometimes very much, the fistula, however, never permanently closing or being healed. Finally the woman died of a pneumonia, which was very likely the result of her condition. The

operation here was made a very simple one, owing to the gall-bladder being so large and easily handled.

Dr. LAFLEUR wished to say a few words with reference to the inocuousness of bile in the peritoneal cavity. It is hard to say when the bile is septic and when not. In regard to the first case mentioned by Dr. Shepherd, he thought a diagnosis of the condition could be positively made from the physical signs. The character of the tumour was clear, because the area of dulness on either side was quite continuous with the liver dulness, an absolutely flat note being elicited from the lower border of the tumour right up to the liver. If it had been renal, as Dr. Shepherd suggested, there would be some interspace between the tumour and the liver with a lighter note. Then the feel of the tumour was too elastic for a solid growth.

Dr. ARMSTRONG said that Dr. Roddick's case recalled to his mind one of his own attended with somewhat similar difficulties. The woman went home after the operation with the bile flowing through a fistulous opening in her abdomen. After an abscess of six months she returned with the bile still flowing, but with her stools pretty well coloured. Dr. Armstrong then made some attempts to stop the escape of the bile by means of cotton wool plugs and collodion. A second effort in this respect was successful, and after remaining here six weeks without any sign of the flow breaking out again, she went home. The fistula eventually closed up.

Annual Meeting.

The twenty-fourth annual meeting was held on Friday, October 5th, 1894, Dr. JAMES BELL, President, in the chair.

The members present were: Drs. Wm. Gardner, G. P. Girdwood, A. Proudfoot, James Perrigo, J. B. McConnell, J. Chalmers Cameron, F. Buller, T. Wesley Mills, D. F. Curd, J. A. Macdonald, G. T. Ross, Thomas D. Reed, James Stewart, J. Alex. Hutchison, F. R. England, H. S. Birkett, A. W. Gardner, E. H. P. Blackader, H. A. Lafleur, J. H. B.

Allan, D. DeCow, J. H. Bell, J. A. Springle, G. Gordon Campbell, James M. Jack, J. G. McCarthy, J. Leslie Foley, F. A. L. Lockhart, J. A. Macphail, D. J. Evans, W. S. Morrow, A. E. Orr, H. D. Hamilton, H. B. Carmichael, C. F. Martin, George A. Berwick, S. Ridley Mackenzie and Kenneth Cameron.

The minutes of the last annual meeting were read and confirmed.

Dr. J. M. Jack, Treasurer. read the following annual statement :

Dr.

To Balance on hand in Molsons Bank	$ 411 10		
" Subscriptions from members (arrearages)	355 00		
" " " " 1893-94	415 00		
" Insurance Policy (cash rebate)	1 35		
" Bank interest on account for year 1893	13 98		
" Balance from dinner fund	1 10		
" Montreal Clinical Society, rent of room 1893-94	25 50		
" Amount from sale of door keys	5 50		
			1,228 53

Cr.

By Dr. K. Cameron (Secretary, 1892-93 and 1893-4)	$ 100 00		
" Babcock & Son, printing 1892-93	50 00		
" Dr. Buller, rent one year Aug. 1, 1893 to Aug. 1, 1894	425 00		
" Dr. Hayes, stenographer, 6 m s. and one session	83 00		
" M. Gebhardt, window blinds	10 81		
" C. E. Larkin, typewriting	8 00		
" J. F. Barlow, carpenter	9 05		
" Jas. Walker, hardware	4 70		
" Renaud, King & Patterson, furniture	20 85		
" Water taxes year ending 1st May, 1894	22 50		
" Insurance premium on $500 for 3 years	4 00		
" Henry Morgan, sundries	2 22		
" Benallach Printing Co	10 50		
" Royal Electric Co., construction	55 60		
" " " lighting	13 63		
" D. Bentley & Co., printing	$ 20 35		
" " books, statements, etc	12 25		
		32 60	
" C. Ashford, journals and stationery	37 85		
" Dr. T. D. Reed, re 6th volume of proceedings	5 00		
" Gazette, printing	2 75		
" Water taxes year ending May, 1895	17 46		
" Caretaker for session	22 00		
" J. Crowe & Son, 50 yale keys	12 50		
" Cost moving furniture to St. Catherine street	5 00		
" Adams, door plate	2 00		
" Postage account for year	39 34		
" Towels	3 15		
" Letter box	2 50		
" Sundries	7 83		
			$1,010 09
Cash balance on hand			$218 44

Assets.

To Cash on hand	$218 41	
" Subscription (arrearages)	605 00	
" Rent B. M. Society	3 00	
" Furniture, fittings, etc.	200 00	
		$1,026 41

Liabilities.

By Rent, two months to October 1, 1894	$ 70 82	
		$ 70 82
Balance		$955 62

Respectfully submitted,

JAMES M. JACK,
Treasurer.

The above report audited and found correct.

A. D. BLACKADER,
W. H. HINGSTON,
J. B. MCCONNELL,
THOS. D. REED,
KENNETH CAMERON.

September 19th, 1894.

Dr. KENNETH CAMERON, Secretary, reported that at the beginning of the session there were 117 ordinary members, 15 new members were elected, 1 died and 1 resigned, making a present total of 130; of these 114 are resident and 16 non-resident.

The number of temporary members had been greatly increased by the election of the resident staff of the Royal Victoria Hospital, the total membership now being 16. No honorary or corresponding member was elected.

Twenty regular meetings were held with an average attendance of 33.25 members per meeting, or an increase of 2.25 members per meeting over last year. The largest attendance at any meeting was 48 and the smallest 13 members.

Dr. T. D. REED, the Librarian, read the following report:

Considerable difference of opinion existed as to the desirability of placing the library and reading room in a different story of the building from the meeting room; the separation has now been accomplished for a year, in our present quarters, and each member can form his own opinion of the change.

The number of readers may be considered to have been

about the same as previous years; exact statement on this point cannot be made, as members have access at will to the room by private key and leave no record of attendance.

The journals have been maintained as before and the valuable series of London, Philadelphia, New York and Montreal publications have been kept up by binding.

There are now on the table 4 weekly and 30 monthly journals.

No additions to the library by purchase have been made, as the Council has not appropriated any money for the purpose It is very desirable that the Society should arrange for an annual appropriation for the purchase of the new encyclopedias, dictionaries, practices and other works of reference, which everyone would like occasionally to consult.

We are indebted to Dr. Blackader for a valuable series of *Braithwaite's Retrospect.*

To Dr. Smith and others our thanks are due for numerous medical journals.

The new room, though small, has been found comfortable and sufficiently commodious for the present.

The following officers were elected for the ensuing year.

President—Dr. G. P. Girdwood.

1st Vice-President—Dr. J. B. McConnell.

2nd Vice-President—Dr. J. Alex. Hutchison.

Secretary—Dr. G. Gordon Campbell.

Treasurer—Dr. J. M. Jack.

Librarian—Dr. F. A. L. Lockhart.

Council—Drs. James Bell, Perrigo and Shepherd.

Dr. James Bell, the retiring President, then read the

ANNUAL ADDRESS.

The Constitution and By-Laws of the Montreal Medico-Chirurgical Society demand of the retiring President that "He shall present at the annual meeting a written address, which shall include a resumé of the work done during the year."

You have already heard from the report of the Secretary that we have now a larger membership and that we have had during the year just ended a larger attendance, both average and minimum, than ever before. From the Treasurer we have learned that notwithstanding our more commodious and more expensive quarters and the great expenses incurred in fitting them up for occupation, we have a surplus of over $200 at the end of the year. This is undoubtedly due largely to the adoption by the Society of better business methods (as well as to the energy of the Treasurer), but it must also be taken to indicate a greater and more genuine interest in the Society by the profession at large. These facts speak for themselves and constitute an effective answer to those who feared that in taking these rooms which we at present occupy we were launching out upon a scheme of extravagance which would ruin the Society.

Turning now to the professional work of the Society during the year, I find that it may be summed up as follows: There were 9 papers and 9 case reports read, 19 living cases exhibited, and upwards of 73 specimens presented. Besides these, 3 demonstrations were given which are not included in any of the above headings.

What instantly strikes one in this very condensed resumé of the professional work is, that while on the whole there was no dearth of work, there were only 9 papers given in 20 meetings. Following up this analysis we find that among 142 members and an average attendance of 33.25, 25 names only appear as contributors during the year. Moreover, the discussions have been confined to a small proportion of the members present at any meeting. This, I fear, is the weak point of the Society, and I trust that the members will pardon me for calling attention to it. With every department of medicine represented on our programme, as they have been—clinically and pathologically—medicine and surgery, gynæcology and obstetrics, ophthalmology, otology and laryngology, and with such a

wealth and variety of material presented it seems strange that lack of discussion should be a feature of our meetings. I am sure that I voice the sentiments of the older members and of those who have been the main contributors in the past when I say that we would gladly see the younger members take a more prominent part in the preparation and the discussion of papers. Let it not be thought for a moment that here some are teachers and some are students, rather let it be understood that all are students and all may be teachers; that here we meet on common ground for mutual benefit and for the advancement of our profession. We have abundant facilities, let us have active professional work in the Society from every member, young and old. This is all that is needed to make our Society a great power in the land. In fact it is already a great power, and we can look with pride upon the part which it has recently played in several great public reforms, notably the reform of the national quarantine system within the last two years. In making this statement I do not wish in any way to detract from those who were more directly responsible for the reforms mentioned, but simply to state the fact that this Society did not stand aloof but took a firm and uncompromising position in support of the movement for reform.

The discussion of matters concerning the health of the public and the welfare of the profession I conceive to be an important function of this Society. Further, a more active interest among the members must rapidly develop a higher class of work—collective investigation, formal discussions on important subjects in the different departments of medicine, committee investigations and reports on material presented at the meetings, and finally, as an outcome of all this, better arrangements for the editing and publishing of a volume of the Society's transactions annually.

There is another matter which I wish to specially commend to the thoughtful consideration of every member of

this Society. A year ago we celebrated the fiftieth anniversary of the founding of the Society: to-night we are transacting the business of the twenty-fourth annual meeting of its second renaissance. Is not the time ripe for the establishment of a permanent home for the Society? We are domiciled here in our present quarters for four years more, and although at this moment I know of no scheme on foot, or even suggested for the purpose, it does not seem to me that it need be looked upon as entirely utopian to hope that before our present lease has expired such a scheme should at least be well under way. Of course it means money, and I know too well that no large sum of money could be raised among the members of this Society, but this fact need not be fatal to the project. We see hospitals, schools, libraries and institutions of all kinds grow up around us, not only in Montreal, but elsewhere, from public and private benefactions, in many cases directly influenced by medical men. Why may we not hope, if the want is made known, that some public spirited citizen will in the near future build such a monument to his memory? Such an institution will certainly be founded in Montreal sooner or later. Such institutions already exist and have long existed in all great medical centres, even in this, the new world. I have not inquired into the histories of the different institutions of this kind, but I was greatly impressed by the fact, noted during a recent visit to Philadelphia, that the Academy of Medicine of that city is now nearly two hundred years old. What we want is a permanent abode, not only for our meetings, but where we may establish a library and a museum for reference, and preserve pictures and mementoes of the great lights of the profession to stimulate us and those who come after us to greater efforts and better work. In conclusion, gentlemen, I beg to tender you all my sincerest thanks for the honour which you conferred upon me a year ago by electing me President of this Society, and for the confidence and support which you have since accorded me as its presiding officer.

Obituary.

DR. JOSEPH WORKMAN.

No member of the medical profession in Canada has had so long, and few, if any, so brilliant a career as the subject of the present sketch.

Born at Lisburn, Ireland, in 1805, he had all the qualities of a gifted son of that land which has produced so many around whom fond memories will linger. All the members of his family were endowed with physical vigor, talent and that indomitable energy which is essential to pronounced success.

Dr. Workman graduated at McGill University in 1835, and for years before his death was her oldest surviving medical graduate. Though he practised a short time in Montreal, he soon took up his residence in Toronto, which continued to be his home for fifty-eight years.

The doctor's strong literary and political tastes early led him into journalism, and the *Mirror* was a powerful reflector of this brilliant writer's views on the questions of the day. In 1836 Dr. Workman became a professor of the Rolph School of Medicine and soon ranked as one of its most popular teachers, winning the grateful esteem of many young men who retained for him a profound respect and almost filial regard throughout their lives. Perhaps no man occupying a place in the ranks of the Canadian profession has ever so attached to himself the young men with whom he came closely in contact. Acquaintance soon grew into friendship, then admiring devotion, never to grow less. In 1853 began a new era in this remarkable man's career. He then undertook the management of the Toronto Asylum for the Insane. He found it in chaos, with the prevalence of ancient and irrational methods of treatment corresponding with still more irrational views of insanity itself; and after twenty-two years of service he left the institution, after he had made it and himself famous throughout America at least.

Dr. Workman had resisted all attempts to constitute the institution over which he presided a refuge for political hacks, or in any way to subordinate the interests of his

patients, to whom he seemed to be attached as a friend, to considerations of a political kind. He had also the most intense hatred of every form of sham or pretence. Like every fearless man who is in advance of his time, Dr. Workman had enemies. He was assailed in the press because of his views regarding responsibility in the insane, but all who attacked the vigorous, witty and, on such occasions, caustic doctor, did so to their cost, whether through the press or in the witness box. His was a sword "of the ice brook's temper," that never failed to cut deep. He on many occasions championed the cause of the profession, and we are to-day reaping the rewards of his hard fought battles.

From 1875 onward he enjoyed quiet, yet not inactive leisure. Till the day of his death the latest medical and other literature was to be found on his table. His contributions to the medical press, especially on alienistic subjects, were numberless; and he was an honorary member of the Medico-Psychological Society of Great Britain and also of Italy.

He was an industrious translator of medical and scientific Italian publications. In fact he translated the whole of the most important contribution that had up to date been made in Italy on the anatomy and physiology of the brain, though for this he never could secure a publisher. Dr. Workman occasionally, when on visits to his relatives in Montreal, attended the meetings of the Medico-Chirurgical Society and was elected an honorary member.

In 1889 his portrait in oil was hung in the rooms of the Toronto Medical Society, a fitting tribute to the Nestor of the profession in Canada, on the very ground on which his battles had been fought and his victories won, and where he rested surrounded by hosts of devoted and admiring friends.

The veteran passed away when quietly sitting in his chair, busy to the last—just as he would, no doubt, have preferred to close the scene. His career has been a great and worthy one, and he has left a record of which the profession to which he belonged may be proud. We have parted with a great intellect—a noble heart.

PROF. GEO. E. FENWICK, M.D.

Prof. Geo. E. Fenwick, whose death took place on the 26th of June, 1894, was born in Quebec in 1825, and graduated M.D., C.M., McGill Uuiversity, 1847. For many years Dr. Fenwick has been a prominent figure in the medical world of Canada, and his reputation as a bold, skilful and scientific surgeon was not confined to Canada alone. The many generations of students who have sat under him, both in college and hospital, and who have always looked upon him as a friend, will receive the news of his death with more than ordinary regret. As a teacher in hospital he markedly impressed his personality on his class and taught them to rely on their own experience and powers of observation, and not on text books alone. Dr. Fenwick was never the slave of authority, he had a mind of his own and observed independently; what seemed good for him to do he did, not because some one in Germany or England advocated it, but because he himself had practised it and found it of benefit. He never could be trammelled by rules and regulations, and even time was no object to him if he had work to do. It is hard to estimate the value of Dr. Fenwick's services to Canadian surgery. He was the pioneer in many operations and procedures in those pre-antiseptic days when the difficulties of surgery were so much greater and the obstacles so much more formidable than now-a-days, when every young graduate has the *pruritus operandi*, and thinks that so long as he carries out aseptic precautions nothing can go wrong; when in doubt he always operates, thus often reducing the science of surgery to a mere mechanical trade. Now, Dr. Fenwick undertook and carried through new and formidable procedures when there was everything to lose, and when operations, new ones especially, were looked upon with suspicion and the operator occasionally held up to obloquy. If he thought the patient would be benefited by operation, nothing would deter him from carrying out his plan. His name in this country, at any rate, will always be associated with excision of the knee-joint, and his

operation, which he has described in the *International Encyclopedia of Surgery*, and also in a book on "Excision of the Knee-joint," will always be extensively practised. As a lithotomist Dr. Fenwick had great success, his large collection of calculi, with their histories, in the Museum of the Medical Faculty of McGill University testifies to this. He was renowned for his success in operations on large tumours, especially of the neck, and also for his successful excisions of the rectum. He was an accomplished surgical anatomist, and this was a great aid to him in operations which required careful dissections. The extent of his work can, in some measure, be estimated by turning over the pages of the CANADA MEDICAL JOURNAL and CANADA MEDICAL AND SURGICAL JOURNAL, of both of which journals he was editor, the first in association with Dr. F. W. Campbell. In these journals are numerous valuable contributions from his pen, both in the original and editorial departments. No one who had ever been intimately associated with Dr. Fenwick could help loving him; his kindly face, his sympathetic manner, his willingness to place his knowledge and skill at the service of his younger brethren, his charity for error and his modesty and genuineness, endeared him to all his associates both young and old. The Museum of the Medical Faculty of McGill University owes much to Dr. Fenwick, the majority of the specimens in the "bone room" were collected by him. He took infinite trouble to secure "specimens," running risks which others would be unwilling to encounter to obtain them. Everyone who has seen him in the operating room will remember how keen he was to preserve a stone just removed or bones excised, and how he was ever unhappy whilst they were passing about the class, so fearful was he that they might come to harm.

He held many important positions, having been President of the Canadian Medical Association and Montreal Medico-Chirurgical Society, and also for many years a member of the Council of the College of Physicians and Surgeons of Quebec. For twenty-five years he was connected with the teaching staff of McGill University, two years as Demonstrator of Anatomy, eight years as Professor of Clinical

Surgery, and fifteen years as Professor of Surgery. He was probably the oldest volunteer surgeon in Canada, and was connected up to his death with the Montreal Field Battery. Through ill-health Dr. Fenwick resigned his professorship in 1890, and although he did some operating work after that, still he found his strength was not sufficient for the strain of a difficult operation, and for the past two years he did little more than a consulting practice. He developed arterial sclerosis some years ago, and had had several slight cerebral hæmorrhages.

A few days before his death he had a cerebral hæmorrhage, with right hemiplagia and aphasia and gradually sank on the afternoon of the 26th of June.

He was one of the last of the surgeons who had obtained his great skill in operating in the school of surgeons of the pre-anæsthetic days. He has left an honourable record at the McGill University and the Montreal General Hospital which will not soon be effaced, and his memory will always be green in the hearts of his students and colleagues.

In 1852 he married Miss E. C. De Hertel, who survives him, and he leaves one daughter, Mrs. Geo. Massey.

APPENDIX A.

REPORT OF THE SPECIAL COMMITTEE APPOINTED BY THE MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

The Coroners' Law of the Province of Quebec.

Your Committee appointed to consider the present system of conducting inquests and the modifications, if any, which may wisely be introduced in the present law relating to inquests, beg to present to the Society the following report :—

The enquiry into and determination of the cause of the death of any individual or individuals, where such death has occurred under circumstances that are out of the common, is a matter that does not come under the cognizance of the Dominion authorities, save and except when the inquest leads to a finding of death by criminal act or criminal neglect. Hence (with the exception that whenever such a charge is brought, the depositions taken by the coroner must be transmitted to a magistrate or justice of the peace, and the coroner must issue a warrant against the person or persons charged, etc.), the coroner's procedure is a matter outside the Dominion Statutes, and it is in the power of the Legislature of the Province of Quebec to freely modify the existing law. Your Committee desire to draw attention to this fact at the outset, for, this being so, the task of introducing certain modifications, or, indeed, of completely altering the procedure, becomes an easy one, granted that the members of the Provincial Legislature become assured of the need for change.

The present Provincial laws respecting enquiries into the mode and cause of death are based essentially upon the old English Common Law. The enquiries are placed in the control of coroners appointed by the Provincial Government, a

coroner for each judicial district. The coroner need not be a member of either the legal or the medical profession, although in the great majority of cases he belongs to one or the other.

Upon receiving notice of a case of death following upon any act of violence, or of death attended by suspicious circumstances, it is his duty to make a preliminary enquiry.

If, with or without medical aid, he comes to the conclusion that the cause of death is to be made out without the assumption of there having been either criminal act or criminal neglect, he can order the interment of the body. If, on the other hand, he is led to suspect that death has been due to violent or unfair means, or culpable or negligent conduct of others, under circumstances calling for investigation by a coroner's inquest, then, having made a sworn deposition to this effect before a magistrate, he is empowered to hold an inquest. What these "circumstances" are which call for investigation is not defined in our Statutes, they being left to the coroner to determine. Having made the deposition, he now can summon a jury and hold a coroner's court. He is empowered to call before him such witnesses as in his opinion can throw light upon the cause of death.

The jury must view the body of the deceased, and if the majority of the jury desire it, the coroner is directed to instruct an autopsy to be performed to throw some light upon the cause of death. Having heard all the evidence, the coroner sums up, and leaves it to the jury to bring in a verdict, and when this has been delivered the coroner gives an order for the interment of the body.

The coroner is paid six dollars for every inquest, and if an inquest occupies more than two days, three dollars for every succeeding day. The practitioner of medicine making an external examination of the body receives five dollars, making an autopsy he receives ten dollars. There are further fixed charges for the constable who summons the jury and witnesses, for chemical analysis, for hire of room to be used for the inquest, and for guarding the body.

This, put as succinctly as possible, is the present coroners' law for the Province of Quebec.

Several objections have been brought against this method of investigating suspicious deaths, and despite the fact that the

law as now administered is much amended, and differs in many respects from the law of a few years back, the objections still retain their force. Your Committee would point out what it considers to be the most serious disadvantages of the present mode of procedure.

1. *The cost.*—Taking the returns for Montreal alone, as shown by Dr. Wyatt Johnston, the cost per inquest—that is to say, per case—is decidedly greater than in London, New York or Massachusetts. The rate would seem to be $22.00 in Montreal, $15.00 in London, $16.90 in Boston, $12.80 in Massachusetts generally, $10,00 in New York; and this notwithstanding the fact that autopsies, the most expensive individual item in the investigation of suspicious deaths, are from three to four times as frequent in other cities as they are in Montreal. Here, in Montreal, it costs more to maintain a dead body in the care of the coroner than it does to maintain an ordinary live individual with a healthy appetite at a first-class hotel for the same period. Some of the items permitted by law in the coroner's accounts ought to be lessened or removed altogether, others ought to pass into general police accounts. But the fact remains that the system is as expensive as its results are unsatisfactory, and that the chief source of expense is the legal investigation of cases which do not call for legal investigation at all, owing to the fact of death not having been due to violence. The exclusion of cases not calling for inquest by means of a preliminary medical examination seems to be the most rational means of reducing the expenses.

2. *Payment by Fees.*—Your Committee is of opinion that, as a matter of principle, the payment of the coroner according to the number of inquests held by him is most unsatisfactory, and is inimical to the proper carrying out of enquiries into the cause of death.

Your Committee find that of the cases of death calling for a coroner's investigation occurring in the various large towns, from 50 per cent. to 75 per cent. can upon preliminary investigation be found to be due to natural causes. That is to say, the more careful the preliminary investigation made by the coroner, and the more conscientious and expert he shows him-

self in the performance of his duties, the fewer the inquests he finds it necessary to hold, and the less his income if he be paid so much per inquest. While if it so happens that his enquiries lead him to suspect the frequent occurrence of any one form of crime at any period, as, for example, child murder, and so to hold an increased number of inquests upon certain classes of cases, immediately he lays himself open to the charge of seeking to increase his income. This ought not to be. In the cities, at least, the coroners ought to receive fixed salaries.

3. *The Jury.*—Under the present system the jury in Montreal, with rare exceptions, certainly cannot be said to be a capable and representative assembly of citizens. Men engaged actively in any form of business prefer to employ any subterfuge rather than sit for what may be many hours in a morbid atmosphere, for no return whatsoever save discomfort and loss of time. The consequence is that too often the jury is composed of a heterogeneous collection of incapables, gathered from the highways and byeways and bar-rooms of the neighbourhood. The verdict of such incapables is, time after time, at variance with the evidence presented.

4. *Viewing the Body.*—The custom of viewing the body is as old as the coroner system. It arose at a time when violent deaths were as many as doctors were few, and when population was everywhere so sparse that the jury had an important part to play in determining by external examination that death was due to violence, and, again, in identifying the corpse. Now-a-days, in a large town, it is highly probable that not one of the jury will have known the deceased, and the determination of the cause of death may more safely be left to medical men. In any case, it is easy to obtain identification by means other than the irruption of a strange, unseemly rabble into the house of mourning. The general feeling throughout the community is that this intrusion into the circle of bereaved relatives in the very depth of their trouble, permitted by the present law, ought to be prevented, and your Committee urges strongly that it is as unnecessary as it is unbecoming. It has been superseded in many States by a system of sworn affidavit of the fact of death and the identity of the body, and this course should be followed here.

5. *Suicide.*—The existing law does not demand inquest in cases of *felo de se*. This your Committee, on the whole, is inclined to consider a disadvantage. The general opinion of the community is strongly opposed to suicide, and were it to be recognized that this mode of death necessarily involved a public investigation, there is little doubt that the unpleasant publicity of the subsequent proceedings would act as a deterrent in not a few cases. As a matter of fact, suicide is on the increase in those States where this deterrent does not exist or has of late years been removed.

6. *Medical Evidence.*—A study of the verdicts brought by the coroner's juries shows clearly that the decision of points of medical evidence is a matter that should not be left to non-medical persons. Statements utterly at variance with the cause of death assigned have been time after time accepted blindly by coroner and jury. The appreciation of medical facts, and the opinions to be formed from these facts, come properly within the domain of the medical expert. It cannot be expected that the legal coroner and the jury should without fail form correct opinions upon delicate medical problems.

Another point with regard to medical evidence may here be brought forward. The practitioner who is called to testify as a physician differs from the other witnesses, from the fact that he is called in his professional capacity. The value of his evidence lies in this, that he has studied the condition of deceased prior to death, and his evidence must depend for its value upon the importance of these earlier professional studies in throwing light upon the cause of death. To this extent, therefore, his evidence is expert evidence, and as such it ought to receive a recompense. But under the present system no fee whatsoever is allowed save for external or internal examination of the body of the deceased. The medical practitioner is wrongly treated as an ordinary witness.

Your Committee strongly approves of the plan adopted in many of the United States, of admitting a written medical deposition of fact or opinion as evidence at inquests in cases where the personal attendance of a medical witness is not considered necessary by the coroner.

7. *The Performance of Autopsies.*—In all the large class of cases now investigated before juries where sudden death occurs

without the slightest external lesion, an autopsy is advisable. Nevertheless, with an exception to be presently noted, no autopsy can be performed unless it be demanded by the majority of the jury. That is to say, the jury has to express itself willing to waste an hour or more in the middle of its proceedings, so that a competent medical man may be called, who shall make an examination into the state of the viscera. As a consequence the jury, in the first place, shows the greatest unwillingness to allow the performance of autopsies, and will the rather return a wholly unreliable verdict. In the second place, the medical man performing the post-mortem is at a great disadvantage, for he is expected to keep the jury waiting as little as possible, and his examination, instead of being deliberate and careful, is hasty and liable to be imperfect Your Committee feel assured that were the coroner allowed full power himself to order an autopsy in all doubtful cases, a very large proportion of cases would be discovered in which there would be no necessity for holding an inquest and summoning a jury. Thereby a very large expenditure would be prevented, and at the same time the cause of death would be satisfactorily established. The exception referred to above is that by the present law the coroner is permitted to order an autopsy if he makes an affidavit that he holds the autopsy to be necessary. Unfortunately, coroners do not seem to have taken advantage of this permission, but prefer to shelter themselves by leaving the matter wholly in the hands of the jury.

A great source of difficulty in connection with the performance of medico-legal autopsies is the absence of any suitable morgue in Montreal, and some measures should be taken without delay to remedy this defect, which also hampers medico-legal investigation in many other ways.

8. *Preliminary Investigations.*—In all cases of suspicious death the first question to be settled is what has been the immediate cause of death. In all cases, therefore, the first point to be investigated is purely medical. It is true that frequently the question is one that can be answered by any individual endowed with common sense, as, for instance, when a corpse is discovered upon the railroad track minus its head, though even in such cases serious mistakes have occurred

through the bodies of murdered persons being so placed as to give an impression of accidental death. But if the question in certain simple cases can be answered by a layman as well as by a professional man, there is a very large number of cases, and these often the most important from a medico-legal aspect, where a direct determination can only be reached by a well-qualified medical man, and where it is all-important that a correct answer be gained at the outset, not only for the benefit of the relatives of the deceased (that they be sheltered from the least breath of unnecessary suspicion), but also for the benefit of the Provincial exchequer, that the Province be not saddled with the cost of an inquest leading to no result. When more than 50 per cent. of all deaths which coroners are called upon to investigate are found to be from natural causes, it is evident that the majority of deaths now investigated require no legal investigation whatever, while, on the other hand, as indicated above, all such deaths demand an initial investigation by a medical man.

9. *Criminal Cases.*—Under the existing law, when his jury brings in a charge of murder or manslaughter, or of being accessory to murder before the fact, against any person or persons, the coroner must issue a warrant against such person or persons, and send him or them before a magistrate or justice, if this has not already been done. He must at the same time transmit the depositions taken before him in the matter.

To all intents and purposes the trial before the magistrate proceeds as though no private enquiry had been held. The coroner's depositions are not employed as evidence. In fact, the magistrate treats the case as though he were proceeding under an ordinary warrant.

If the magistrate confirms the charge the case is sent up to the Grand Jury, and here again all the witnesses are once more summoned and the evidence is repeated, and the Grand Jury finding a true bill, the case goes before the Petit Jury, and again the evidence is repeated.

It appears to your Committee that this procedure is singularly cumbrous, and that, besides harassing the witnesses, it allows an unduly large number of loopholes of escape for those really guilty, upon some legal technicality or faulty observ-

ance of legal procedure. Your Committee, considering that the problem of how this procedure may be simplified is a purely legal one, does not offer any suggestion on the matter.

Taking all these disadvantages into consideration, and being especially impressed by the fact that the earliest stages in the investigation of suspicious death must of necessity be of a medical nature, and by the further fact that where the legal proceedings of the coroner lead to a definite charge against an individual or individuals those legal proceedings are practically passed over unnoticed by the higher courts, your Committee have come to the conclusion that a drastic change in the mode of investigation of suspicious deaths is advisable in this Province.

There are two questions which naturally suggest themselves prominently in connection with questions of coroners' reform. The first is, should the coroner be a physician or a lawyer? and the second, should the office of coroner be abolished?

With regard to the qualifications necessary for coroners, your Committee does not think it necessary to dwell upon the relative advantages of having medical or legal coroners, although this is a subject of dispute which has now been fruitlessly discussed for more than a century, and will in all likelihood continue to be so as long as the coroner system lasts. We wish simply to state the fact of the existence of diversity of opinion on this matter. That there should be any question as to whether a physician or a lawyer would make the best coroner implies that in either case there must be serious disadvantages. The point at issue here is the same as the question, Can a shoemaker make watches better than a watchmaker can make shoes?

In London a settlement of the question has been attempted by selecting as far as possible coroners who have obtained both legal and medical qualifications. This plan of expecting the coroner to be a Jack-of-all-trades has not much to recommend it; and the fact that in London, in addition to the doubly-qualified coroner, there are the deputy coroners, who are obliged by law to be barristers, and all the medical expert work is done by outside medical men, shows that matters are not in any way simplified even by having the coroners who are at once both lawyers and physicians.

The only rational plan, and one whose advantages appear never to have been questioned, is that adopted on the Continent, as well as in those States which now are under the medical examiners system of separating as far as possible the medical and legal side of the investigation, and entrusting these to physicians and lawyers respectively. Your Committee is just as firmly convinced that all legal questions should be left wholly to lawyers as that all medical ones should be entrusted to medical men.

The Abolition of the Office of Coroner.—Your Committee finds that in those States where this has been done the previous difficulties seem to have been promptly and permanently removed, and it does not appear to have been necessary in any instance to revive the office. The office of coroner was created in England while the country was in a lawless state, and when police regulations and courts of justice were almost non-existent. Since the development of the judicial and police system the coroner's office has gradually come to fill the important function of fifth wheel to the car of justice. It has been retained through that conservative spirit which retains the cumbrous system of pounds, shillings and pence for the national currency. Many of the United States are still in that primitive and lawless condition, which makes the office of coroner a useful one. In the more highly civilized States the old coroner system is rapidly disappearing, and it is practically obsolete in five, viz.: Massachusetts, Rhode Island, Connecticut, New Jersey and New Hampshire.

As to whether the office of coroner should be abolished in our own Province, we have no hesitation in stating, as medical men, that, from a medical point of view, the office is simply an absurdity, which constantly interferes with the proper employment of medical science for judicial ends, and that it could be abolished to-morrow with marked benefit to the medical side of criminal cases.

The fact that the appointment of competent medical experts as consultants to the coroner's court of Montreal during the last year has neither prevented nor greatly diminished the number of those palpably absurd and unsatisfactory verdicts, which have made this court a public laughing-stock in past years, shows that something must be radically wrong with the system, which must be remedied, even if this necessitates abolishing the office.

On the other hand, we do not feel, as medical men, competent to decide as to the possible effects which would be produced by this change from a judicial point of view. If the office of coroner were abolished the legal duties would have to be provided for in some way, the details of which can only be decided by persons thoroughly conversant with the workings of our criminal law. Furthermore, the abolition of the office of coroner does not appear to your Committee to be absolutely necessary in order to secure the necessary medical reforms. All that is really necessary is to do away with the medical functions and responsibilities of the coroner and to make the office a purely judicial one, only dealing with those cases where there are definite grounds to suspect death from violence or negligence and these grounds are either strengthened or not removed by the examination of a medical expert.

We would therefore recommend :—

1. That salaried medical examiners be appointed to investigate all deaths occurring under circumstances calling for medico-legal investigation under any act, and that these officers be given authority to make such medical examination of the body as may be necessary to determine whether death was due to violence or not.

2. That in every case the medical examiners report the result of their examination to the coroner or other judicial officer charged with investigating the legal side of such cases, who, in case of violent death, shall make such investigations and take such measures as are necessary for the proper administration of the law.

If necessary, we are prepared to draft an amendment to the law which would secure the proper carrying out of this system.

(Signed) G. P. Girdwood,
J. George Adami.
E. P. Lachapelle.
James Bell.

At the regular meeting of the Society held on Friday, December 15th, 1893, this report was unanimously adopted, and it was resolved that a copy of the report be sent to the Attorney-General and to each of the medical members of the Legislative Assembly and Council of the Province of Quebec.

R
15
M73
v.7

Montreal Medico-Chirurgical Society
Proceedings

Date Due

JUN 15 '34			